



# SEA-TAC INTERNATIONAL AIRPORT

## 2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS

(MC-0318573)

LORA LAKE APARTMENTS SITE REMEDIATION (104395)

LORA LAKE PARCEL SITE REMEDIATION (104396)

100% SUBMITTAL (NOT FOR CONSTRUCTION)

8-29-2016

### CONSULTANTS

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PRIME CONSULTANT PROJECT MANAGERS:

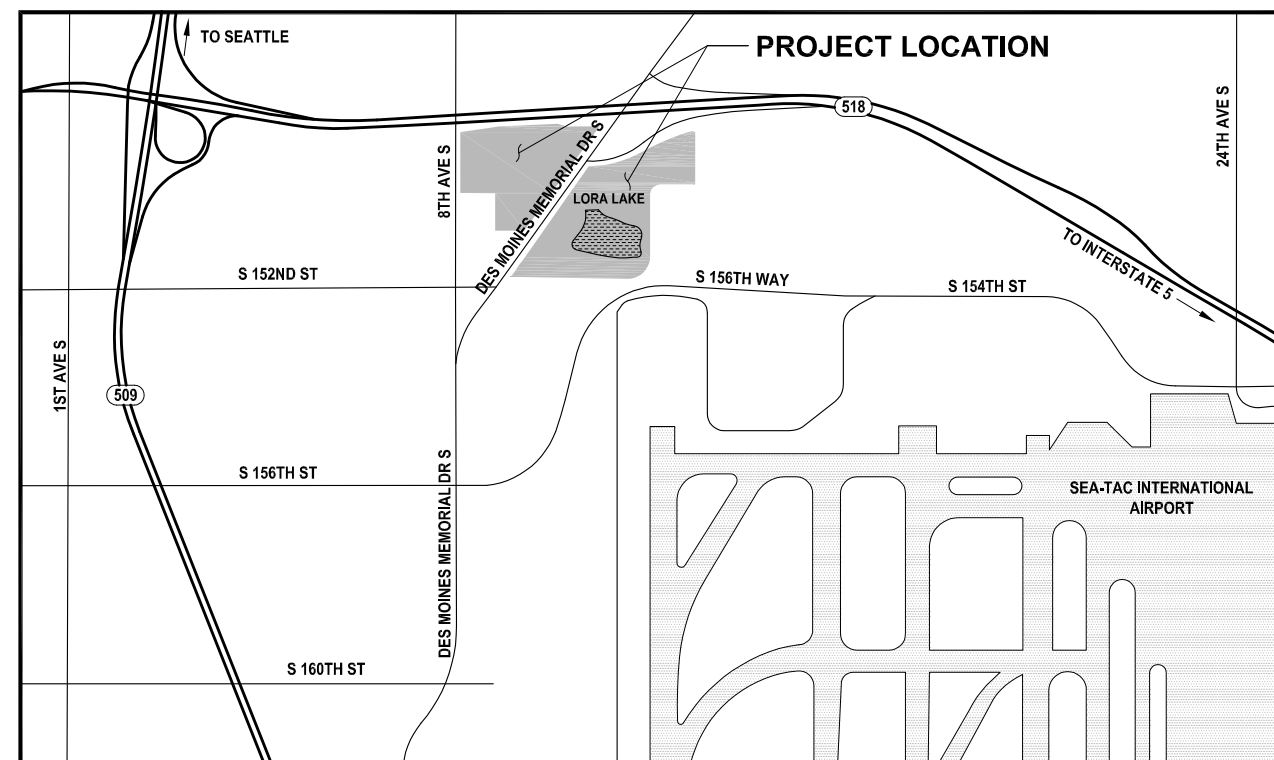
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 SEATTLE, WA 98101  
 TEL: 206.382.0600



VICINITY MAP  
 SCALE: NTS



### MAJOR CONTRACT

RECOMMENDED FOR APPROVAL

\_\_\_\_\_  
 DATE  
 \_\_\_\_\_  
 DATE  
 APPROVED BY \_\_\_\_\_  
 DATE

DATE

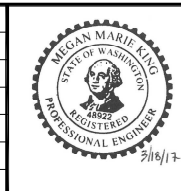
WORK PROJECT NO. 104395 + 104396	PORT OF SEATTLE NO. + SHEET NUMBER STIA-1701 G00.1
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PROJECT ENGR./ARCH:  
MEGAN KING  
DESIGNER:  
MMK  
DRAWN BY:  
JKH  
SCALE:  
AS SHOWN  
DATE:  
8/29/2016  
CHECKED BY:  
JSM  
CHECKED/APPROVED BY:  
MMK



REVISIONS							
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME: 2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS  
SHEET TITLE: SHEET INDEX

POS WORK PROJECT NUMBER  
104396, 104396  
CONSULTANT'S PROJECT NUMBER  
POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER  
STIA-1701 G01.1

**ABBREVIATIONS:**

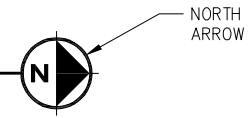
'	FEET, FOOT
"	INCHES
∅	DIAMETER
#	NUMBER
%	PERCENT
APPROX	APPROXIMATE (-E, -LY)
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS INTERNATIONAL
AVE	AVENUE
B&B	BALLED AND BURLAPPED
BGS	BELOW GROUND SURFACE
BMP	BEST MANAGEMENT PRACTICE
CB	CATCH BASIN
CEN	CENTER
CMP	CORRUGATED METAL PIPE
CONT, CONT'D	CONTINU (-ED, -OUS, -ATION)
CP	CONTROL POINT
DIA, DIAM	DIAMETER
DMCA	1982 DREDGED MATERIAL CONTAINMENT AREA
E	EAST/EASTING
E_CEN	EAST CENTRAL
EL/ELEV	ELEVATION
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FT	FEET, FOOT
GAL	GALLON
GPM	GALLONS PER MINUTE
H	HORIZONTAL
HDPE	HIGH DENSITY POLYETHYLENE
HT	HEIGHT
IE	INVERT ELEVATION
IN	INCH (-ES)
LF	LINEAL FEET
LL	LORA LAKE
LLA	LORA LAKE APARTMENTS
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MTCA	MODEL TOXICS CONTROL ACT
MW	MONITORING WELL
N	NORTH
N/A	NOT APPLICABLE
NAD 83	NORTH AMERICAN DATUM OF 1983
NAVD 88	NORTH AMERICAN VERTICAL DATUM OF 1988
NE	NORTHEAST
NG	NATURAL GAS
NGVD 29	NATIONAL GEODETIC VERTICAL DATUM OF 1929
NO	NUMBER
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER
P	POWER
PE	PROFESSIONAL ENGINEER
PERIM	PERIMETER
POS	PORT OF SEATTLE
PVC	POLY VINYL CHLORIDE
QTY	QUANTITY
ROW	RIGHT-OF-WAY
S	SOUTH; SLOPE
SCHED, SCH	SCHEDULE
SD	STORM DRAIN
SE	SOUTHEAST
SPEC	SPECIFICATIONS
SR	STATE ROUTE
SS	SANITARY SEWER
ST	STREET
STA	STATION
STIA	SEATAC INTERNATIONAL AIRPORT
SW	SOUTHWEST
T, TEL, TELE	TELEPHONE
TESC	TEMPORARY EROSION AND SEDIMENT CONTROL
TYP	TYPICAL
US	UNITED STATES
VERT, V	VERTICAL
VIF	VERIFY IN FIELD
W	WIDTH; WEST
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

CALL 2 DAYS  
BEFORE YOU DIG  
1-800-424-5555

**DRAWING TITLES:**

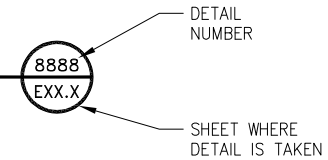
**PLAN**

LINE\_1  
LINE\_2  
LINE\_3  
SCALE: 1/16" = 1'-0"



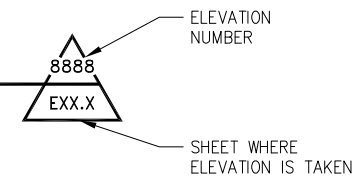
**DETAIL**

LINE\_1  
LINE\_2  
LINE\_3  
SCALE: 1/16" = 1'-0"



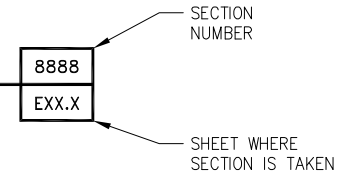
**ELEVATION**

LINE\_1  
LINE\_2  
LINE\_3  
SCALE: 1/16" = 1'-0"



**SECTION**

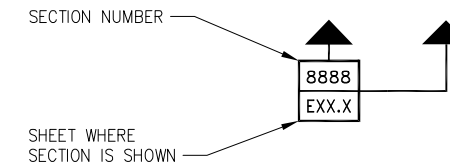
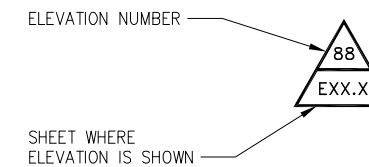
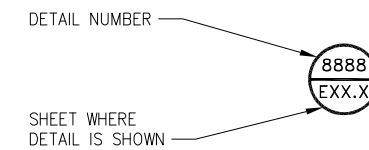
LINE\_1  
LINE\_2  
LINE\_3  
SCALE: 1/16" = 1'-0"



**LEGEND:**

	FIRE HYDRANT
	VALVE (GAS, WATER, NATURAL GAS, WATER)
	TRANSFORMER
	CATCH BASIN STORM SEWER
	MANHOLE
	TELEPHONE VAULT
	LIGHT POLE
	POWER POLE
	MONITORING WELL
	W(D) WATER LINE
	P(D) POWER LINE
	NG(D) NATURAL GAS LINE
	SS(D) SANITARY SEWER LINE
	SD STORM DRAIN LINE

**REFERENCE SYMBOLS:**



**REVISIONS**

NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

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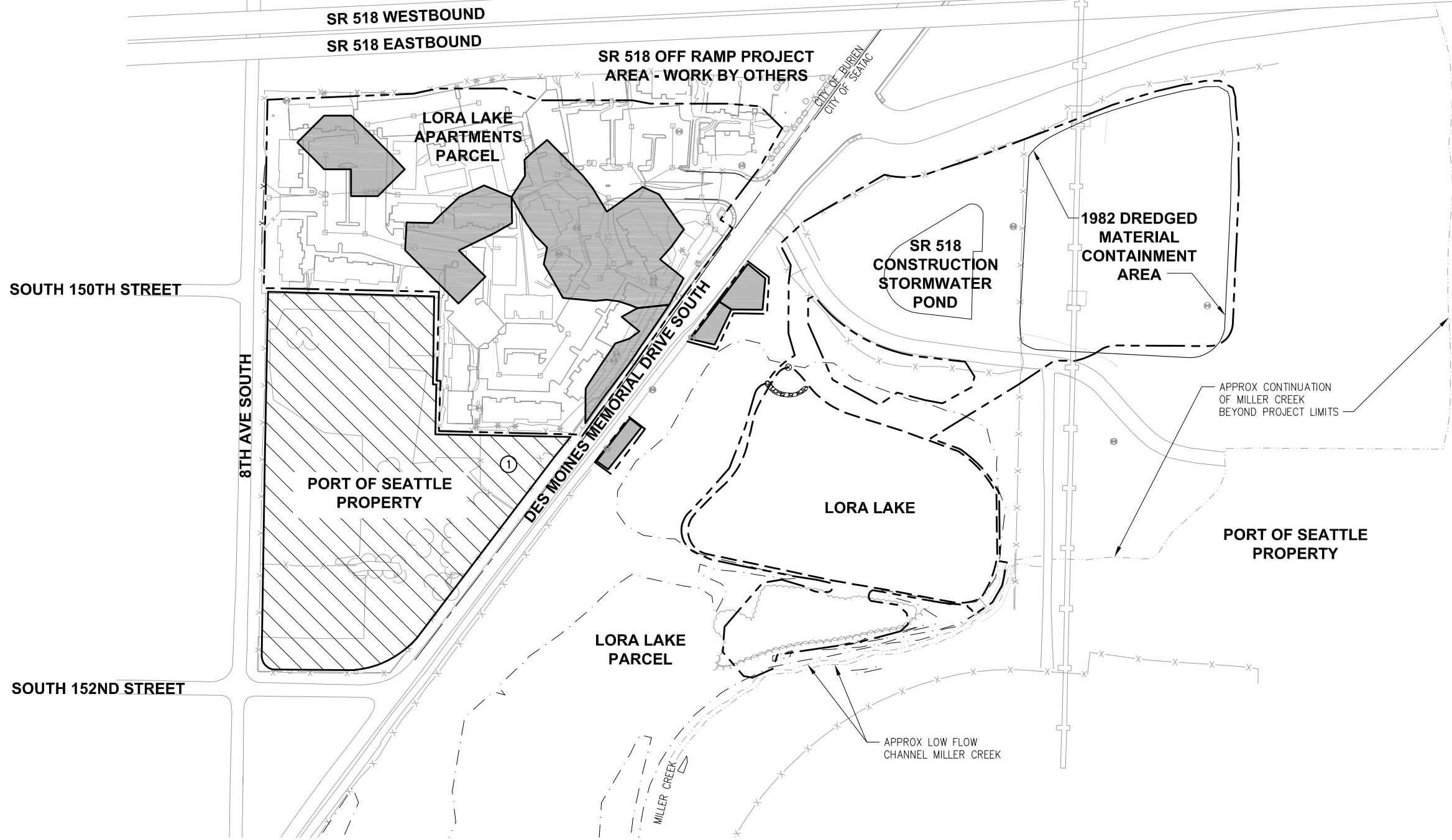
PROJECT ENGR./ARCH: MEGAN KING  
DESIGNER: MMK  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: USM  
CHECKED/APPROVED BY: MMK



POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME: 2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS  
SHEET TITLE: SYMBOLS AND ABBREVIATIONS

POS WORK PROJECT NUMBER: 104396, 104396  
CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER: STIA-1701 G02.1

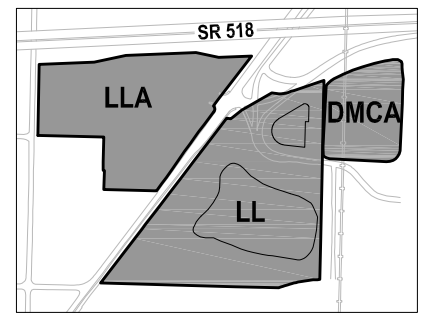
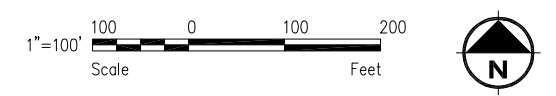


**NOTES:**

① INSTALLATION OF STORMWATER DRAINAGE CONNECTION TO THE CITY OF BURIEN SYSTEM WILL OCCUR WITHIN THE STAGING AREA. REFER TO SHEET CG05.2.

- LEGEND:**
- PROJECT WORK AREA LIMITS
  - SOIL EXCAVATION AREAS
  - CITY BOUNDARY
  - MILLER CREEK
  - EXISTING FENCE
  - LORA LAKE CLEANUP AREA
  - EXISTING GROUNDWATER MONITORING WELL
  - WETLAND BOUNDARY
  - STAGING AREA

**PLAN**  
OVERALL SITE PLAN  
SCALE: 1" = 100'



**KEY MAP**  
NTS

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PROJECT ENGR./ARCH:  
MEGAN KING  
DESIGNER:  
MMK  
DRAWN BY:  
JKH  
SCALE:  
AS SHOWN  
DATE:  
8/29/2016  
CHECKED BY:  
JSM  
CHECKED/APPROVED BY:  
MMK



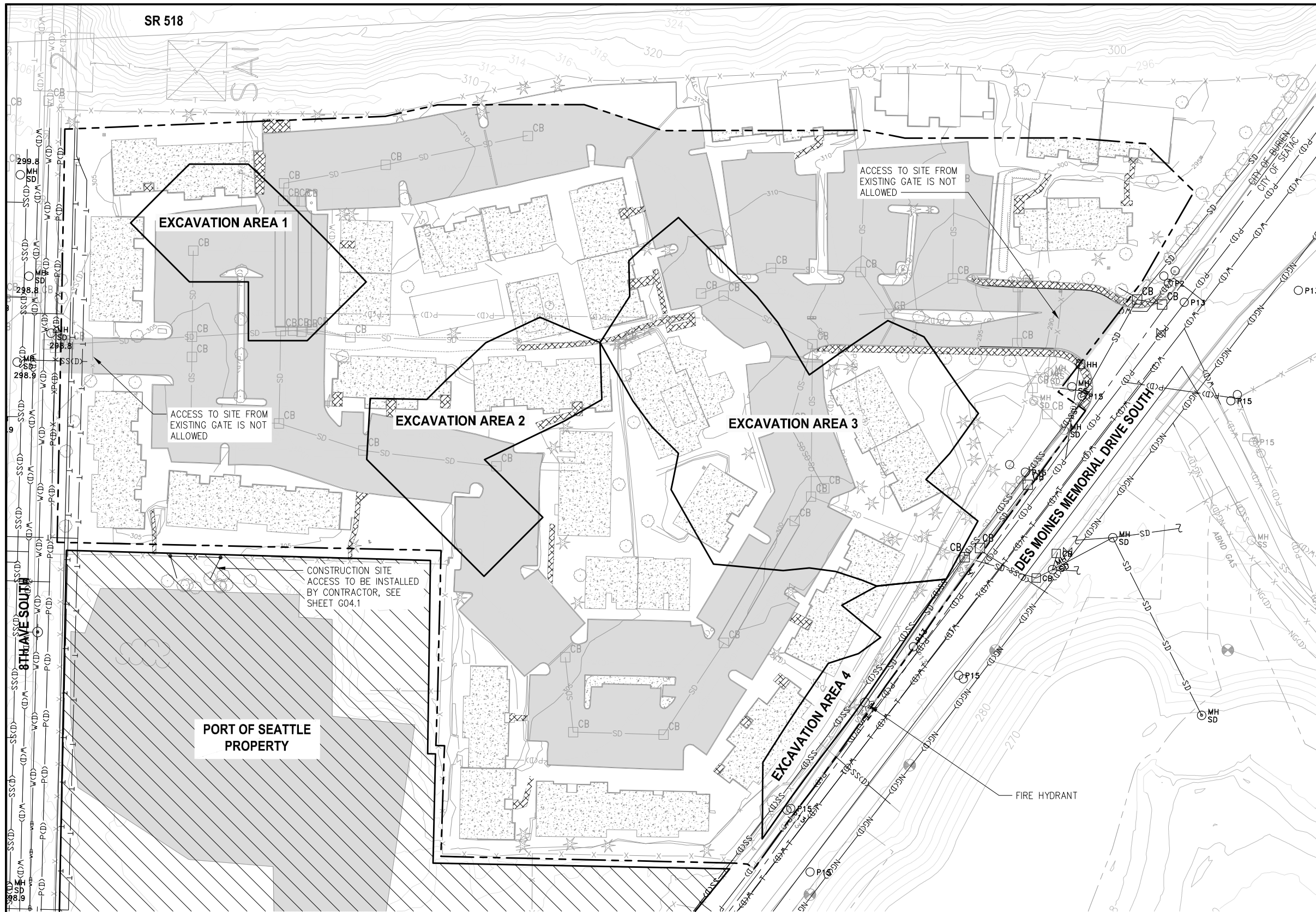
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POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME: **2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS**  
SHEET TITLE: **OVERALL SITE PLAN**

POS WORK PROJECT NUMBER  
**104396, 104396**  
CONSULTANT'S PROJECT NUMBER  
**POS-LLA/POS-LL**  
POS PROJECT TRACKING NUMBER  
**STIA-1701 G03.1**





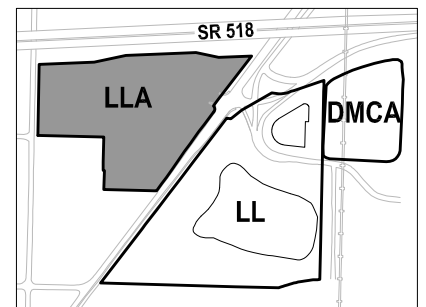
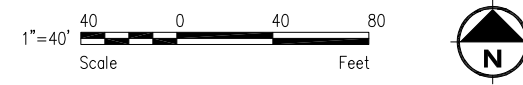
**NOTES:**

- AREAS WITHIN THE PROJECT WORK AREA LIMITS NOT IDENTIFIED AS EXISTING CONCRETE ONSITE ASPHALT OR MISC. CONCRETE SIDEWALKS, PATHS, STAIRS ARE LANDSCAPED AND COVERED IN PLASTIC.
- STOCKPILING OF CONTAMINATED EXCAVATION SOIL AND COMMON EXCAVATION SOIL IS NOT ALLOWED IN STAGING AREA.
- ON-SITE POWER, WATER, SANITARY SEWER, AND TELEPHONE PREVIOUSLY ABANDONED IN PLACE, CUT AND CAPPED AT PROPERTY BOUNDARY. ALL RIGHT OF WAY UTILITIES ASSUMED ACTIVE.
- COMMON EXCAVATION OCCURS IN THE AREAS BETWEEN SOIL EXCAVATION AREAS AND THE PROJECT WORK AREA LIMITS.

**LEGEND:**

- PROJECT WORK AREA LIMITS
- CITY BOUNDARY
- EXISTING CONCRETE FOUNDATIONS
- ON-SITE ASPHALT PAVEMENT
- MISC CONCRETE SIDEWALKS, PATHS STAIRS
- SOIL EXCAVATION AREAS
- EXISTING FENCE
- EXISTING GROUNDWATER MONITORING WELL
- EXISTING TREES
- ELEVATION CONTOUR IN FEET (NAVD 88)
- DETENTION TANK
- STAGING AREA
- CB CATCH BASINS
- OVERHEAD POWER - TO BE PROTECTED
- SD STORM DRAIN LINES
- P(D) POWER
- W(D) WATER
- NG(D) NATURAL GAS
- SS(D) SANITARY SEWER
- T TELEPHONE

**PLAN**  
LLA SITE PLAN  
SCALE: 1" = 40'



**KEY MAP**  
NTS

**FLOYD | SNIDER**  
strategy • science • engineering

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PROJECT ENGR./ARCH: MEGAN KING  
DESIGNER: MMK  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: USM  
CHECKED/APPROVED BY: MMK

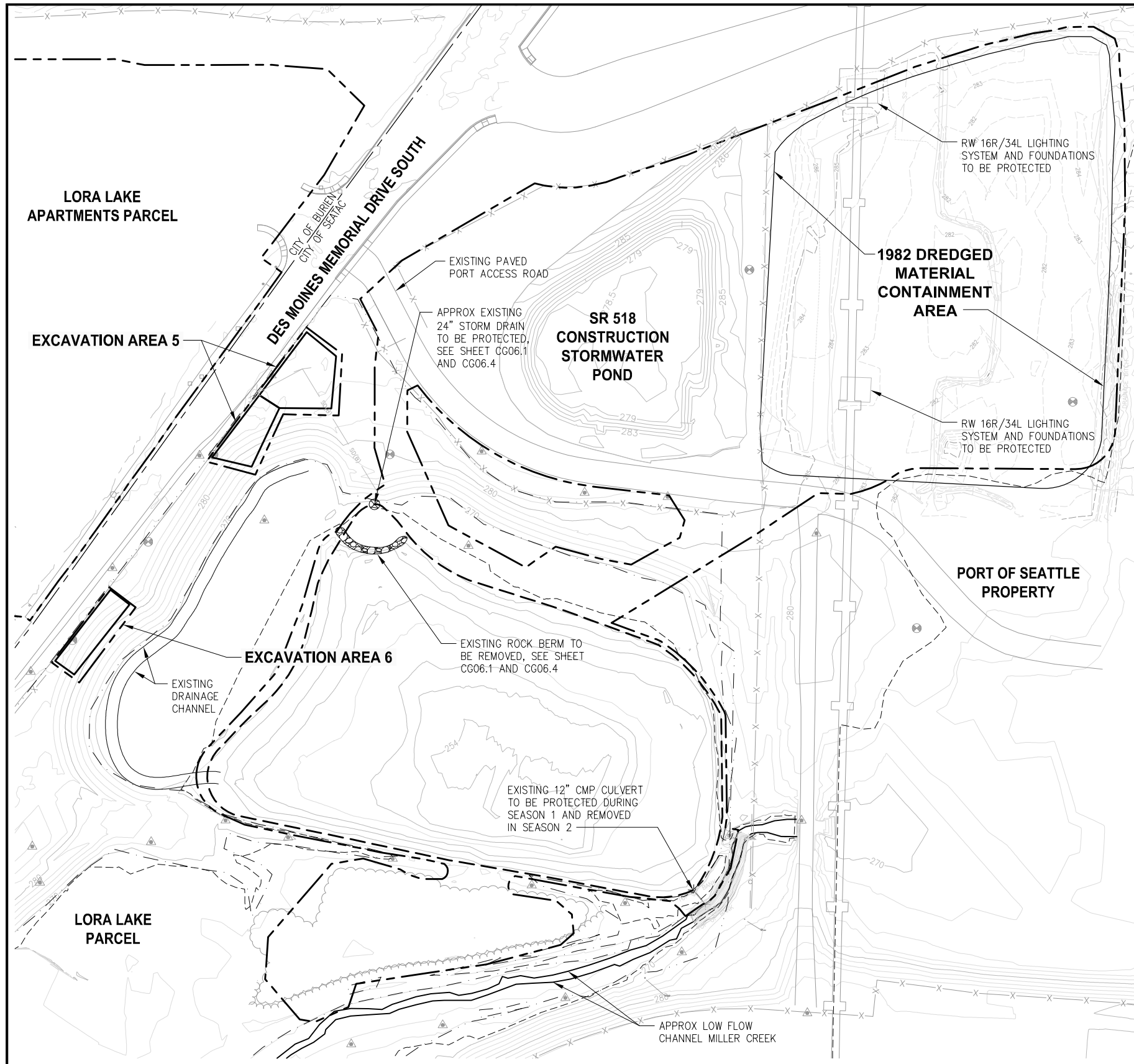


REVISIONS					
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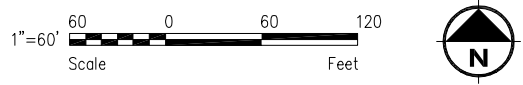
POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME: 2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS  
SHEET TITLE: LLA SITE PLAN

POS WORK PROJECT NUMBER: 104396, 104396  
CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER: STIA-1701 G03.2



**PLAN**  
LL SITE PLAN  
SCALE: 1" = 60'

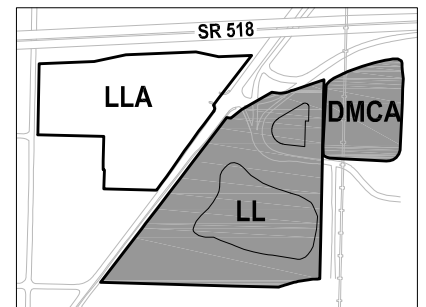


**NOTES:**

1. THIS PLAN PROVIDES AN OVERVIEW OF THE PROJECT ELEMENTS AND DOES NOT COMPLETELY DESCRIBE THE PROJECT. SEE COMPLETE CONTRACT DOCUMENTS FOR ALL CONTRACT AND PROJECT REQUIREMENTS.
2. THE CONTRACTOR SHALL SCHEDULE PROJECT WORK SUCH THAT WATER DRAW DOWN FROM LORA LAKE OR DEWATERING DISCHARGE FROM THE LL APARTMENTS PARCEL NOT INFILTRATED AT THE LL APARTMENTS PARCEL, SHALL BE TREATED AND PUMPED TO THE SR 518 CONSTRUCTION STORMWATER POND AT A CONTROLLED RATE SUCH THAT WATER IN THE POND WILL NOT EXCEED THE POND STAGE OF 4.3 FEET (WHICH HAS A CORRESPONDING VOLUME OF APPROXIMATELY 800,000 GALLONS). ESTIMATED ALLOWABLE PUMPING RATES RANGE FROM 300 GPM FOR AN 8 HOUR, 7-DAY PER WEEK OPERATION, TO 400 GPM FOR AN 8 HOUR, 5-DAY PER WEEK OPERATION. CONTRACTOR SHALL CALCULATE PUMPING RATES RELATIVE TO CONTRACTOR WORK SCHEDULE UTILIZING PROVIDED INFORMATION IN EDR APPENDIX A -SR 518 CONSTRUCTION STORMWATER POND INFILTRATION ASSESSMENT. RATES OF LAKE VOLUME DISPLACEMENT DURING FILLING, AND DEWATERING REQUIREMENTS DURING EXCAVATION AT THE LL APARTMENTS PARCEL, AND ACTUAL POND INFILTRATION RATES MAY VARY OVER TIME, AND THE CONTRACTOR SHALL MANAGE TREATMENT AND PUMPING RATES SO AS TO NOT EXCEED THE COMBINED INFILTRATION AND STORAGE CAPACITY OF THE POND, TANK STORAGE OR TRUCKING VOLUMES.
3. THE DREDGED MATERIAL CONTAINMENT AREA SHALL BE USED AS A STAGING AND STOCKPILE AREA FOR LAKE CAPPING AND FILLING, AND WETLAND REHABILITATION WORK.
4. FLOOD PLAIN EXTENTS SHOWN HERE REPRESENT A BASE FLOOD ELEVATION OF 269 FEET (NAVD 88) AROUND THE LAKE BASED ON FEMA FLOOD INSURANCE STUDY (PANEL 954K AND PROFILE 155P), AND THE FEMA 2007 DELINEATION ELSEWHERE.
5. ENTRANCE TO EXISTING PORT ACCESS ROAD AND ROAD CONFIGURATION IS REFLECTIVE OF THE SR 518 INTERCHANGE RESTORATION PROJECT TO BE COMPLETED IN 2016.
6. ALL CONTRACTOR WORK SHALL BE CONFINED TO AREAS OUTSIDE OF COVENANT AND WETLAND LINES UNLESS OTHERWISE DIRECTED, SEE SHEET G05.1.
7. LORA LAKE CONSTRUCTION ACTIVITIES WILL TAKE PLACE OVER TWO CONSTRUCTION SEASONS.
8. SOIL EXCAVATION AREAS AT THE LORA LAKE PARCEL CONTAIN HEAVY TREE COVER.

**LEGEND:**

- PROJECT WORK AREA LIMITS
- SOIL EXCAVATION AREAS
- LORA LAKE CLEANUP AREA
- 100-YEAR FLOOD PLAIN BOUNDARY
- ELEVATION CONTOUR IN FEET (NAVD 88)
- EXISTING GROUNDWATER MONITORING WELLS
- EXISTING GROUNDWATER PIEZOMETER
- EXISTING FENCE
- RESTRICTIVE COVENANT BOUNDARY
- WETLAND BOUNDARY

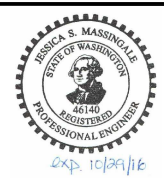


**KEY MAP**  
NTS

**FLOYD | SNIDER**  
strategy • science • engineering

**kpff**

PROJECT ENGR./ARCH:  
JESSI MASSINGALE  
DESIGNER:  
JSM  
DRAWN BY:  
JKH  
SCALE:  
AS SHOWN  
DATE:  
8/29/2016  
CHECKED BY:  
MMK  
CHECKED/APPROVED BY:  
JSM



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT

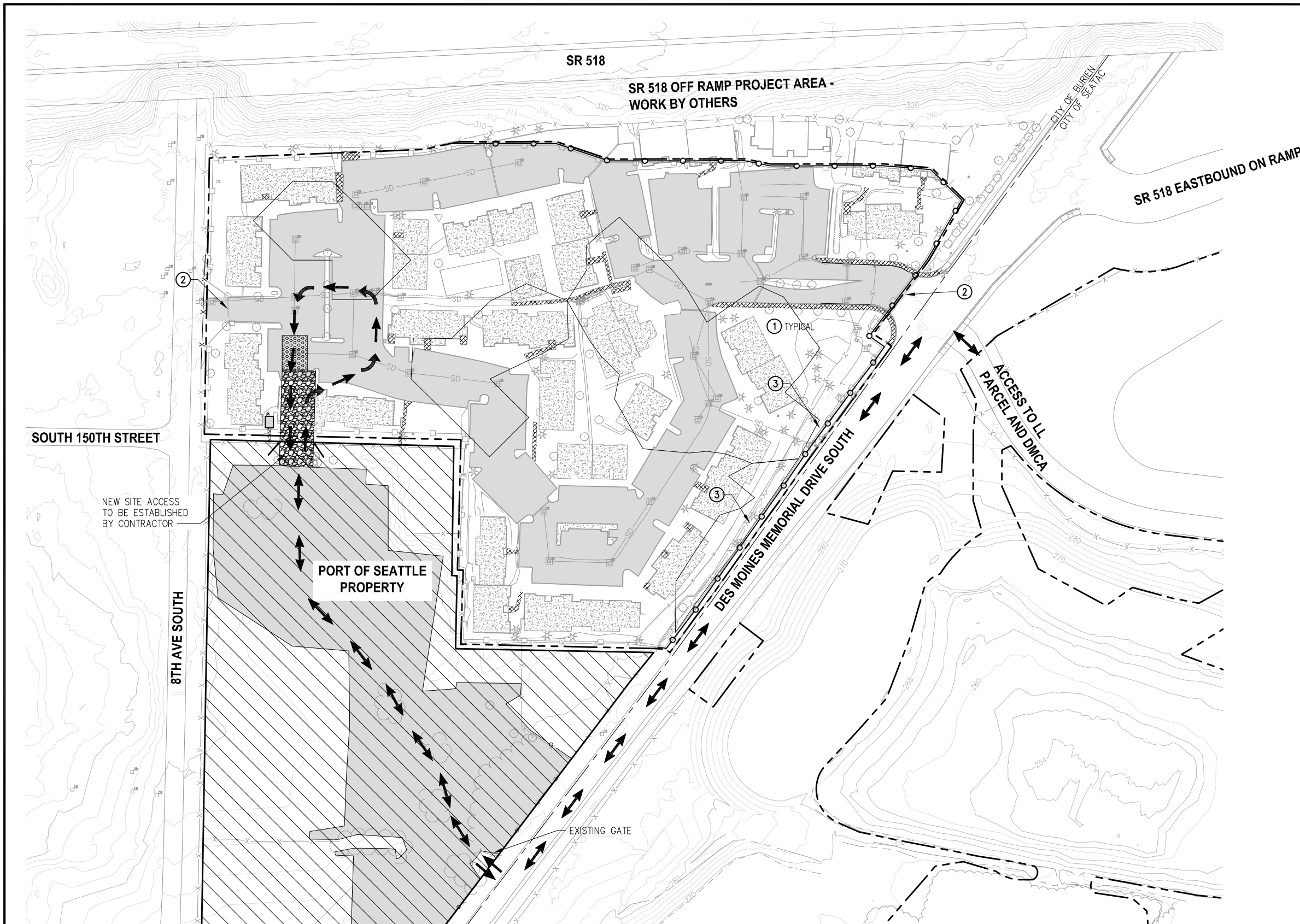
PROJECT NAME:  
**2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS**

SHEET TITLE:  
**LL AND DMCA SITE PLAN**

POS WORK PROJECT NUMBER:  
**104396, 104396**

CONSULTANT'S PROJECT NUMBER:  
**POS-LLA/POS-LL**

POS PROJECT TRACKING NUMBER:  
**STIA-1701 G03.3**



- NOTES:**
- 1 AREAS WITHIN THE PROJECT WORK AREA LIMITS NOT IDENTIFIED AS EXISTING CONCRETE, ONSITE ASPHALT, OR MISC. CONCRETE SIDEWALKS, PATHS, STAIRS ARE LANDSCAPED AND COVERED IN PLASTIC.
  - 2 ACCESS TO SITE FROM EXISTING GATE IS NOT ALLOWED.
  - 3 IF ACCESSING EXCAVATION AREAS FROM RIGHT OF WAY, TRAFFIC CONTROL REQUIREMENTS APPLY. SEE SHEET G04.3

- LEGEND:**
- PROJECT WORK AREA LIMITS
  - SOIL EXCAVATION AREAS
  - WHEEL WASH
  - ON-SITE ASPHALT PAVEMENT
  - MISC. CONCRETE SIDEWALKS, PATHS STAIRS
  - STAGING AREA
  - TEMPORARY CONSTRUCTION FENCE
  - SILT FENCE
  - CONTRACTOR ACCESS ROUTES
  - EXISTING FENCE
  - CONCRETE BUILDING FOUNDATION
  - ELEVATION CONTOUR IN FEET (NAVD 88)
  - QUARRY SPALL PAD
  - PERMANENT GATE - TO BE INSTALLED

SOUTH 150TH STREET

NEW SITE ACCESS TO BE ESTABLISHED BY CONTRACTOR

PORT OF SEATTLE PROPERTY

SR 518

SR 518 OFF RAMP PROJECT AREA - WORK BY OTHERS

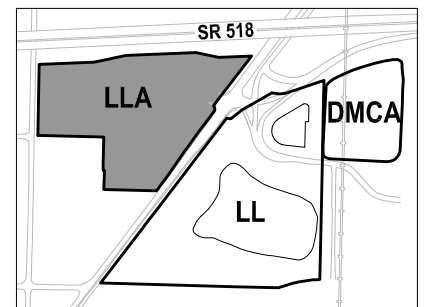
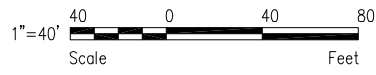
SR 518 EASTBOUND ON RAMP

DES MOINES MEMORIAL DRIVE SOUTH

ACCESS TO LL PARCEL AND DMCA

**PLAN**

LLA ACCESS AND HAUL ROUTES  
SCALE: 1" = 40'



**KEY MAP**  
NTS

**FLOYD | SNIDER**  
strategy • science • engineering

**kpff**

PROJECT ENGR./ARCH: MEGAN KING  
DESIGNER: MMK  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: USM  
CHECKED/APPROVED BY: MMK



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT

PROJECT NAME: 2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS

SHEET TITLE: LLA ACCESS AND HAUL ROUTES







POS WORK PROJECT NUMBER: 104396, 104396  
CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER: STIA-1701 G04.1

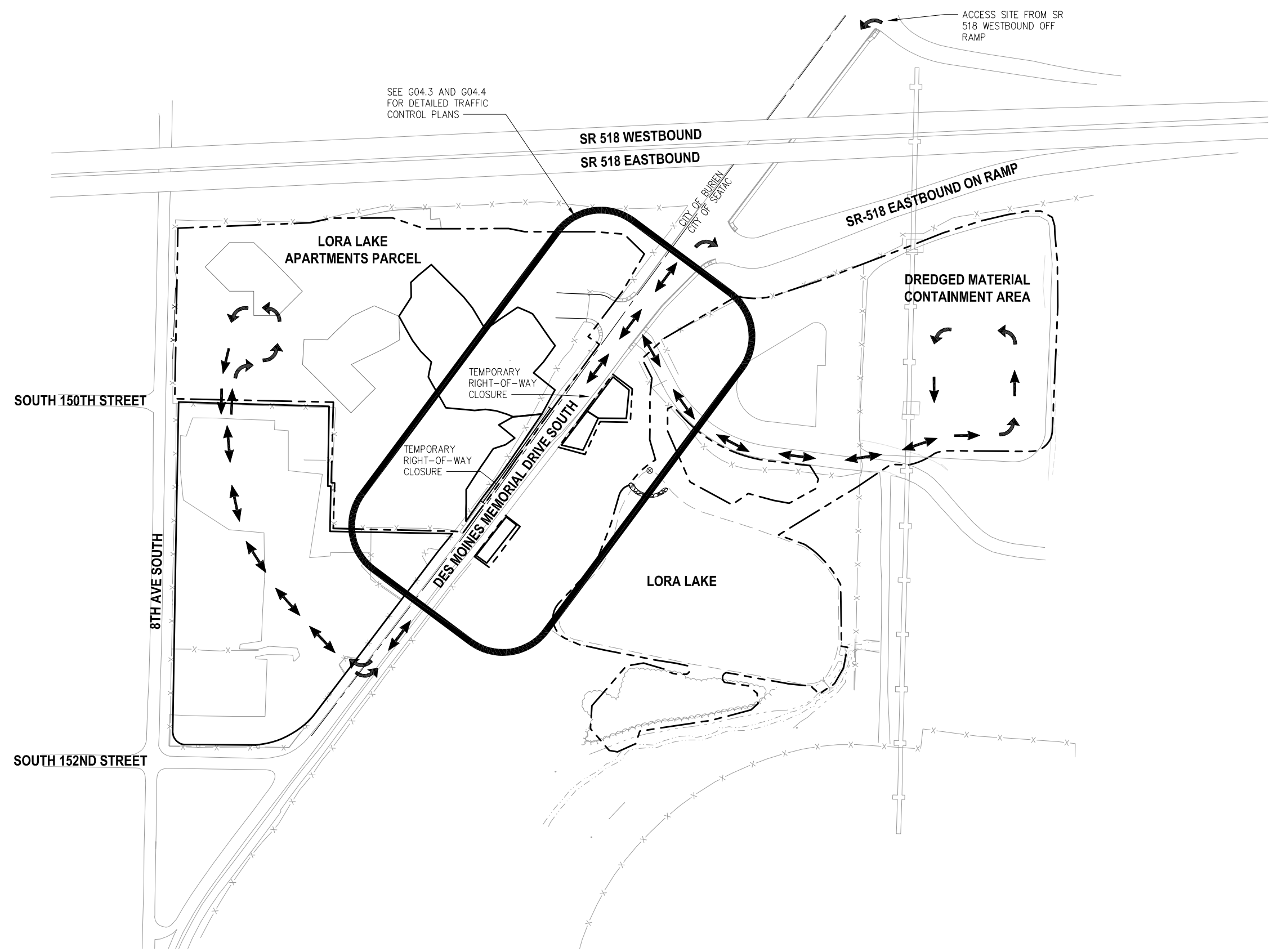


**NOTES:**

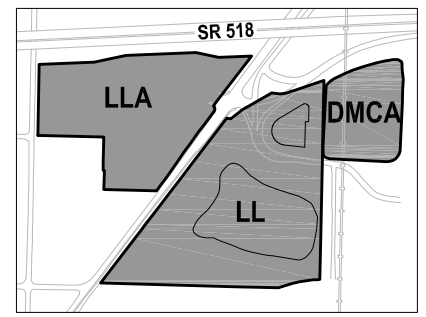
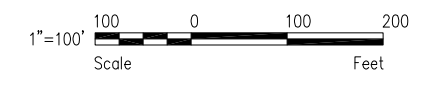
- FOR TRAFFIC CONTROL PLAN CONTRACTOR TO COORDINATE AND OBTAIN APPLICABLE PERMITS.

**LEGEND:**

-  PROJECT WORK AREA LIMITS
-  EXISTING FENCE
-  CONTRACTOR ACCESS ROUTES
-  CITY BOUNDARY
-  WORK AREAS REQUIRING TRAFFIC CONTROL PLAN
-  LORA LAKE CLEANUP AREA



**PLAN**  
LLA TRAFFIC CONTROL PLAN  
SCALE: 1" = 100'



**FLOYD | SNIDER**  
strategy • science • engineering

**kpff**

PROJECT ENGR./ARCH: MEGAN KING  
DESIGNER: MMK  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: USM  
CHECKED/APPROVED BY: MMK



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT

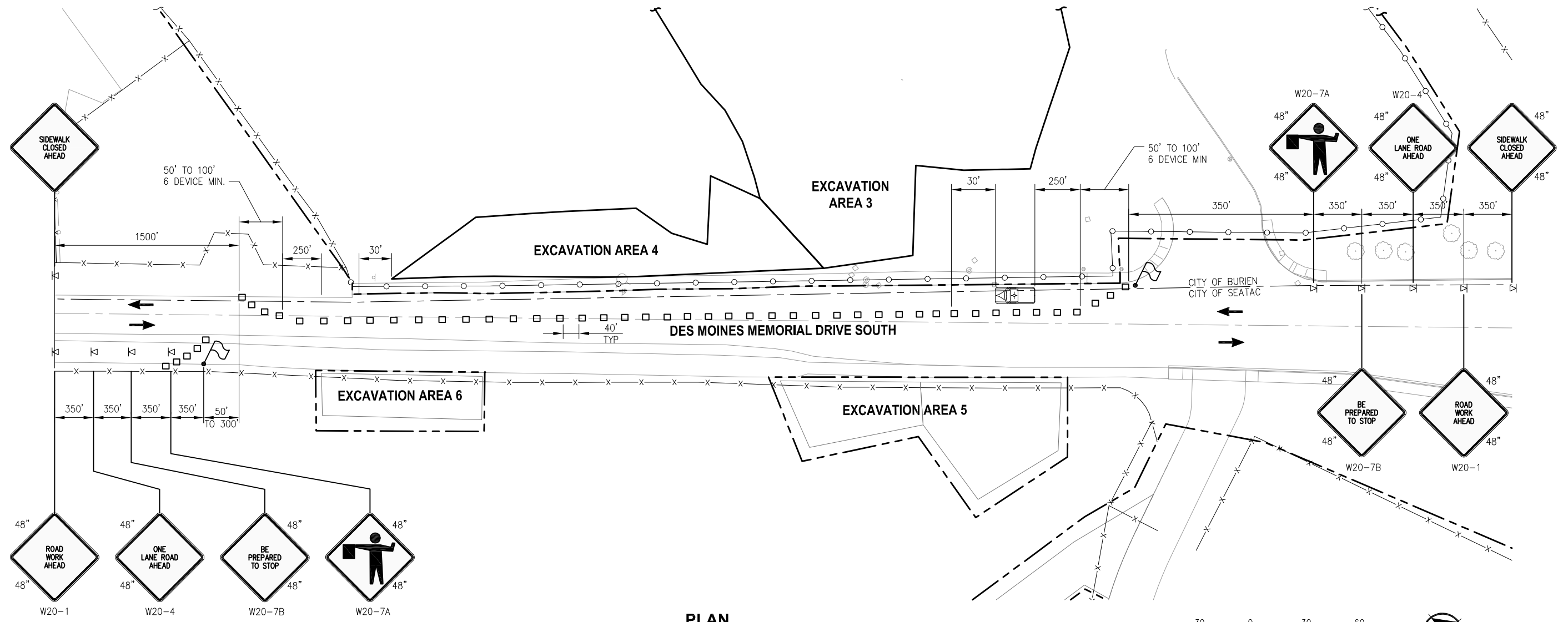
PROJECT NAME: **2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS**

SHEET TITLE: **SITE TRAFFIC CONTROL PLAN**

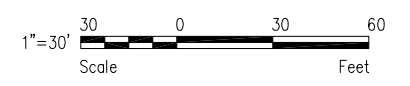
POS WORK PROJECT NUMBER: **104396, 104396**

CONSULTANT'S PROJECT NUMBER: **POS-LLA/POS-LL**

POS PROJECT TRACKING NUMBER: **STIA-1701 G04.2**



**PLAN**  
 SOUTHBOUND LANE CLOSURE  
 TRAFFIC CONTROL PLAN  
 SCALE: 1" = 30'

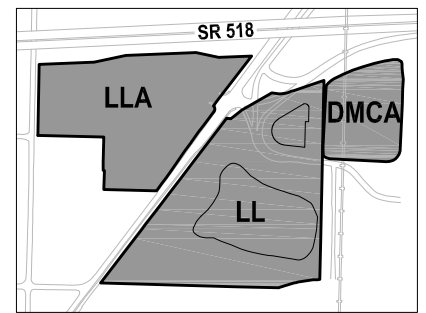


**NOTES:**

1. SIDEWALK CLOSED AHEAD SIGNS ARE NOT SHOWN IN EXACT LOCATIONS.
2. FOR TRAFFIC CONTROL PLAN CONTRACTOR TO COORDINATE AND OBTAIN APPLICABLE PERMITS.

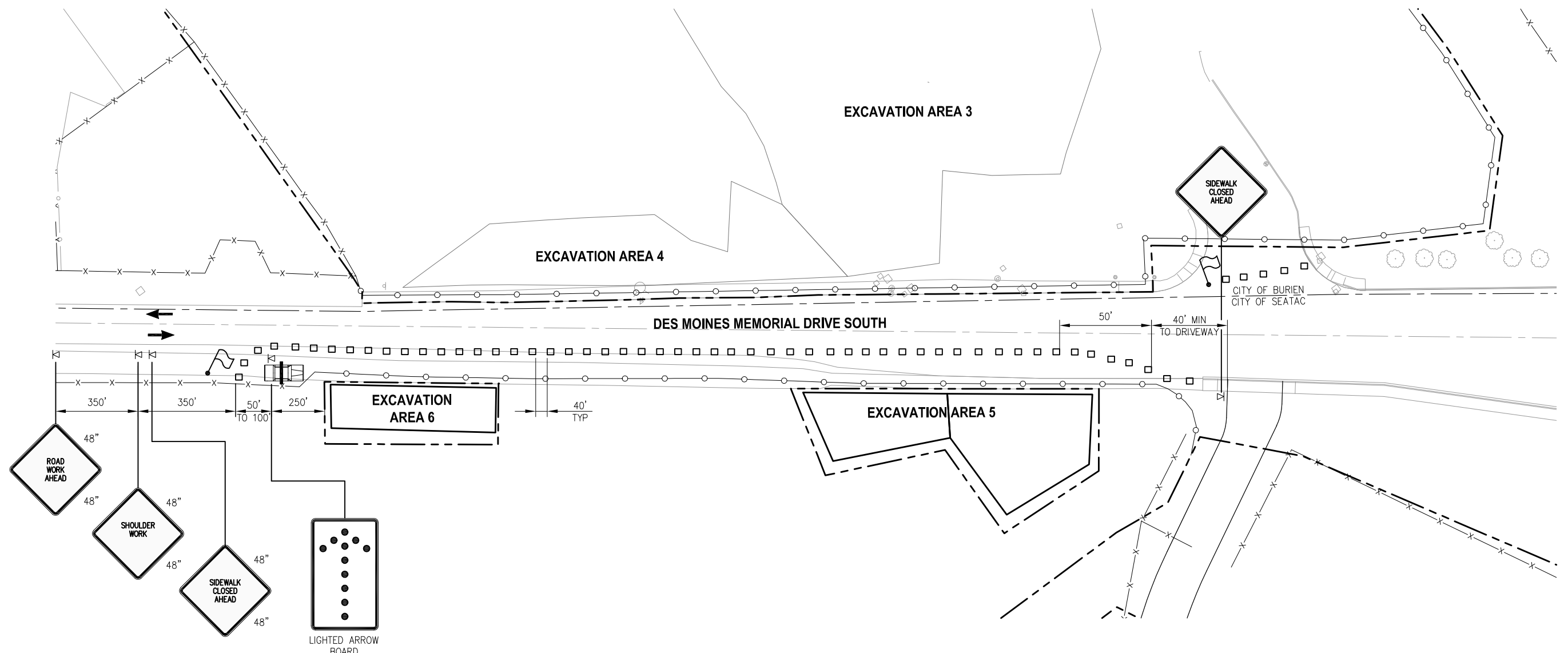
**LEGEND:**

	CHANNELIZING DEVICES		EXISTING FENCE
	FLAGGING STATION		CITY BOUNDARY
	PROTECTIVE VEHICLE		SOIL EXCAVATION AREAS
	PATROL CAR AND OFFICER		
	TEMPORARY SIGN LOCATION		
	PROJECT WORK AREA LIMITS		
	TEMPORARY CONSTRUCTION FENCE		

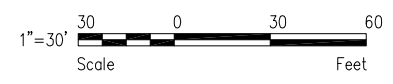


**KEY MAP**  
 NTS

REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D








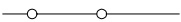
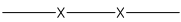

**PLAN**  
 NORTHBOUND RIGHT TURN LANE CLOSURE  
 TRAFFIC CONTROL PLAN  
 SCALE: 1" = 30'

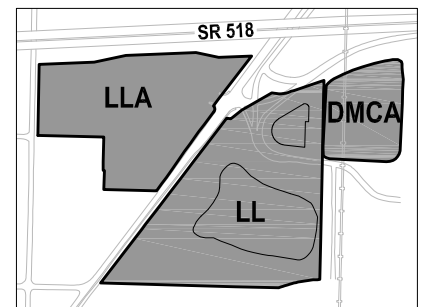


**NOTES:**

1. SIDEWALK CLOSED AHEAD SIGNS ARE NOT SHOWN IN EXACT LOCATIONS.
2. FOR TRAFFIC CONTROL PLAN CONTRACTOR TO COORDINATE AND OBTAIN APPLICABLE PERMITS.

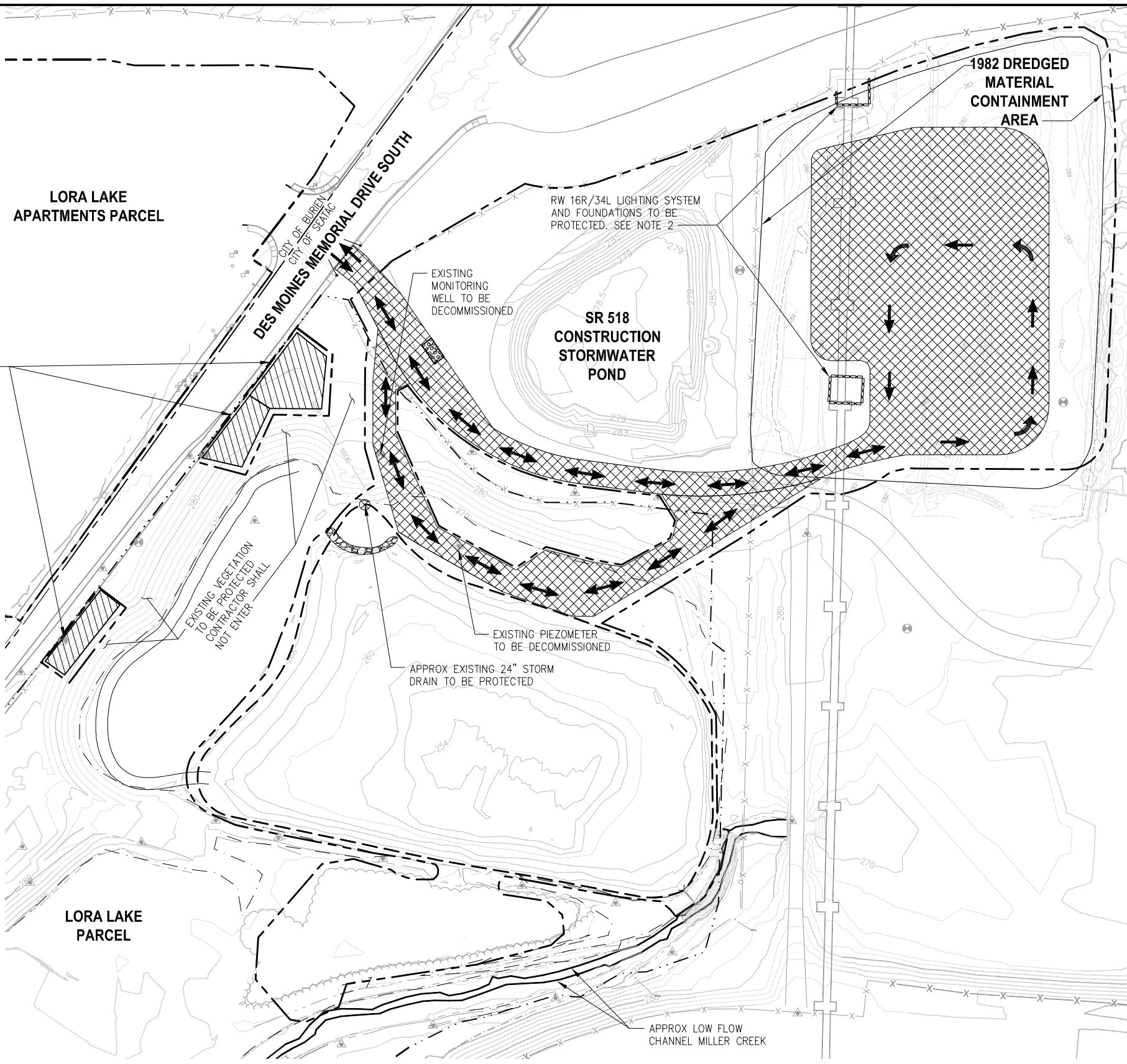
**LEGEND:**

-  CHANNELIZING DEVICES
-  FLAGGING STATION
-  PATROL CAR AND OFFICER
-  TEMPORARY SIGN LOCATION
-  PROJECT WORK AREA LIMITS
-  TEMPORARY CONSTRUCTION FENCE
-  EXISTING FENCE
-  SOIL EXCAVATION AREAS



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

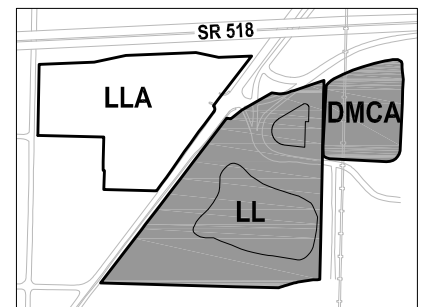
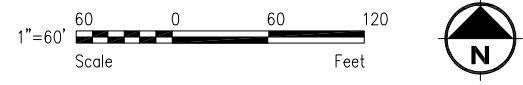
ACCESS SHALLOW SOIL EXCAVATION AREAS FROM THE SIDEWALK AND SHOULDER OF THE ROAD. SEE SPECIFICATIONS FOR REQUIREMENTS AND SHEET G04.4 FOR TRAFFIC CONTROL



- NOTES:**
1. VEGETATION OUTSIDE OF IDENTIFIED ACCESS AND HAUL ROUTES AND SOIL EXCAVATION AREAS TO BE PROTECTED.
  2. PLACE HIGH VISIBILITY FENCE AND ECOLOGY BLOCK TEMPORARY PROTECTION WALL 10 FEET OUTSIDE EXISTING CONCRETE PAD. MAINTAIN DURING ALL USE OF DMCA AS CONSTRUCTION STAGING AREAS.
  3. SEE SHEET CG03.1 FOR DMCA CONSTRUCTION SEQUENCING OF CONSTRUCTION ACCESS AND STAGING AREA.

- LEGEND:**
- PROJECT WORK AREA LIMITS
  - WHEEL WASH
  - CONSTRUCTION ACCESS AND STAGING AREA
  - SOIL EXCAVATION AREAS
  - ELEVATION CONTOUR IN FEET (NAVD 88)
  - LORA LAKE CLEANUP AREA
  - RESTRICTIVE COVENANT BOUNDARY
  - WETLAND BOUNDARY
  - EXISTING FENCE
  - CONTRACTOR ACCESS ROUTE
  - HIGH VISIBILITY FENCE AND ECOLOGY BLOCK TEMPORARY PROTECTION
  - EXISTING GROUNDWATER MONITORING WELL
  - EXISTING GROUNDWATER PIEZOMETER

**PLAN**  
LL AND DMCA ACCESS AND HAUL ROUTES  
SCALE: 1" = 60'

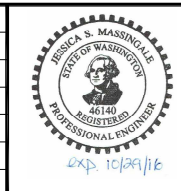


**KEY MAP**  
NTS

**FLOYD | SNIDER**  
strategy • science • engineering

**kpff**

PROJECT ENGR./ARCH: JESSI MASSINGALE  
DESIGNER: JSM  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: MMK  
CHECKED/APPROVED BY: JSM



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NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D



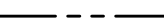



POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME: 2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS  
SHEET TITLE: LL AND DMCA ACCESS AND HAUL ROUTES

POS WORK PROJECT NUMBER: 104396, 104396  
CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER: STIA-1701 G05.1

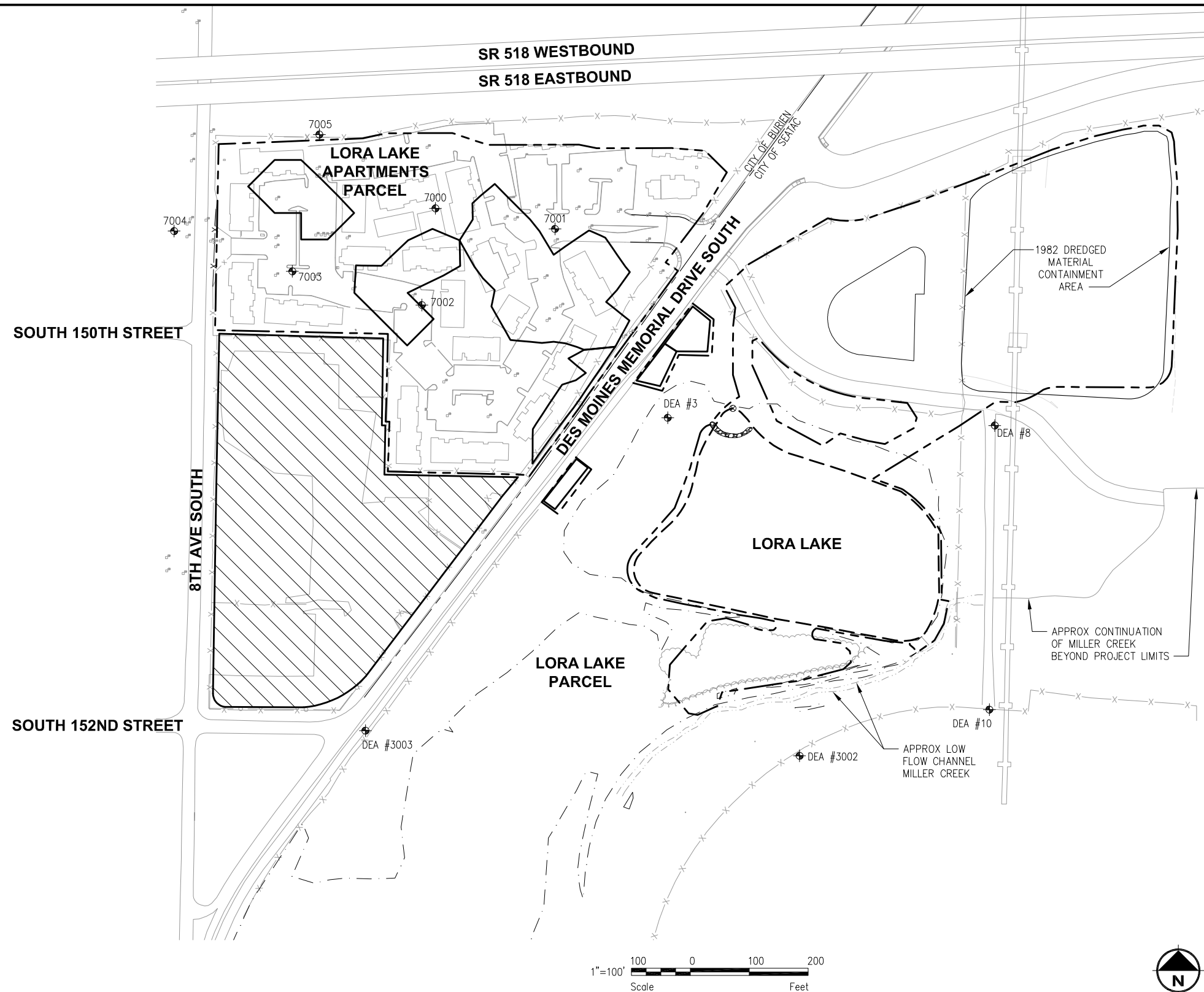
SURVEY CONTROL BENCHMARK INFORMATION				
PT#	NORTHING	EASTING	ELEVATION	DESCRIPTION
DEA #3003	173877.02	1272165.53	283.04	MAG NAIL AND WASHER
DEA #3002	173834.31	1272902.39	289.66	MAG NAIL AND WASHER
DEA #8	174395.12	1273233.67	282.04	SET MAG AND WASHER
DEA #3	174408.22	1272678.51	308.81	SET MAG AND WASHER
DEA #10	173912.73	1273224.49	290.79	SET MAG AND WASHER
7000	174728.89	1272487.25	304.76	MAG NAIL
7001	174694.00	1272690.08	288.48	MAG NAIL
7002	174564.84	1272464.12	299.65	MAG NAIL
7003	174621.94	1272244.35	308.32	MAG NAIL
7004	174690.27	1272043.70	304.95	MAG NAIL
7005	174854.21	1272290.16	311.63	MAG NAIL

**LEGEND:**

-  SURVEY CONTROL POINT
-  SOIL EXCAVATION AREA
-  PROJECT WORK AREA LIMITS
-  WETLAND BOUNDARY
-  LORA LAKE CLEANUP AREA
-  STAGING AREA

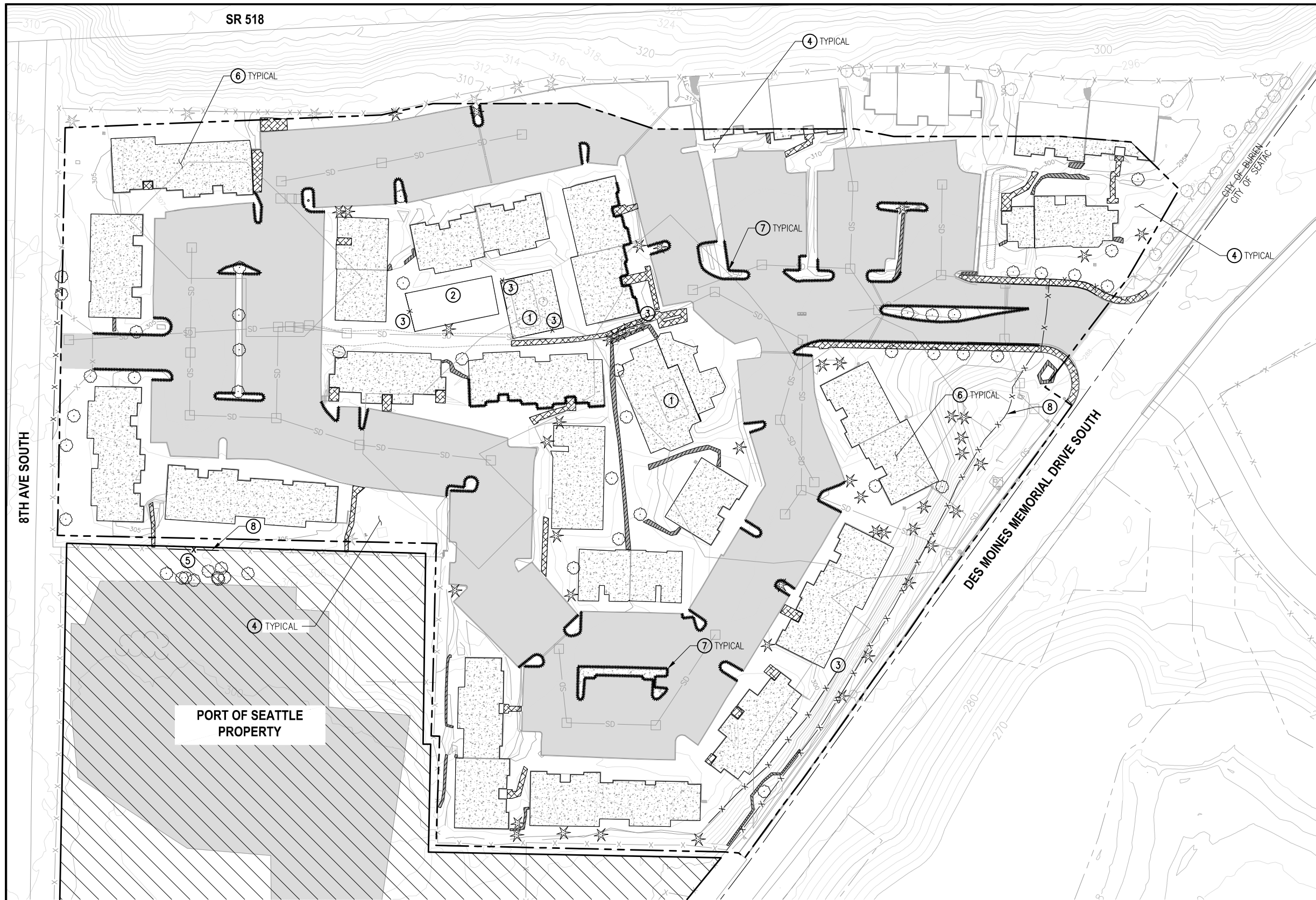
**SURVEY AND DATUM INFORMATION**

- DATUM INFORMATION:
  - HORIZONTAL DATUM: NAD 83 WASHINGTON STATE PLANE NORTH ZONE (FIPS 4601), IN US FEET.
  - VERTICAL DATUM: NAVD 88, IN US FEET.
- NGVD 29 IS CONVERTED TO NAVD 88 BY ADDING 3.547 FEET.



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D



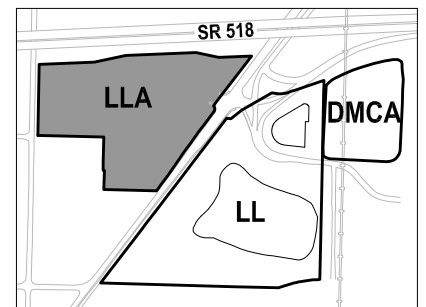
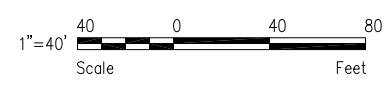


- NOTES:**
- ① SWIMMING POOL SURFACE FEATURES TO BE REMOVED.
  - ② SPORT COURT TO BE REMOVED.
  - ③ MISC FENCES TO BE REMOVED AND DISPOSED OFF-SITE AS SUBTITLE D MATERIAL.
  - ④ AREAS BETWEEN BUILDING FOUNDATIONS AND PAVEMENT COMPRISED OF DENSE VEGETATED LANDSCAPING TO BE REMOVED.
  - ⑤ FENCE AND TREES TO BE REMOVED FOR THE ESTABLISHMENT OF NEW SITE ACCESS POINT. ONLY REMOVE TREES IF REQUIRED FOR SITE ACCESS. OTHER TREES ON SITE NOT SHOWN.
  - ⑥ ALL NON-YELLOW PAINTED CONCRETE TO BE CRUSHED AND REUSED ON-SITE.
  - ⑦ YELLOW PAINTED CONCRETE SHALL BE DISPOSED OFF-SITE AS SUBTITLE D MATERIAL.
  - ⑧ CHAIN LINK FENCE TO BE REMOVED AND RECYCLED OFF-SITE

- LEGEND:**
- PROJECT WORK AREA LIMITS
  - SOIL EXCAVATION AREAS
  - FENCE - TO BE REMOVED
  - ASPHALT - TO BE REMOVED
  - CONCRETE BUILDING FOUNDATION - TO BE REMOVED
  - ROCK RETAINING WALL - TO BE REMOVED
  - EXISTING TREES - TO BE REMOVED
  - CURB - TO BE REMOVED
  - EXISTING FENCE
  - ELEVATION CONTOUR IN FEET (NAVD 88)
  - MISC. CONCRETE SIDEWALKS, PATHS, STAIRS - TO BE REMOVED
  - STAGING AREA
  - YELLOW PAINTED CONCRETE - TO BE REMOVED

**PORT OF SEATTLE  
PROPERTY**

**PLAN**  
LLA CLEARING, GRUBBING  
AND SURFACE DEMOLITION  
SCALE: 1" = 40'



**KEY MAP**  
NTS

**FLOYD | SNIDER**  
strategy • science • engineering  
**kpff**

PROJECT ENGR./ARCH:  
MEGAN KING  
DESIGNER:  
MMK  
DRAWN BY:  
JKH  
SCALE:  
AS SHOWN  
DATE:  
8/29/2016  
CHECKED BY:  
JSM  
CHECKED/APPROVED BY:  
MMK

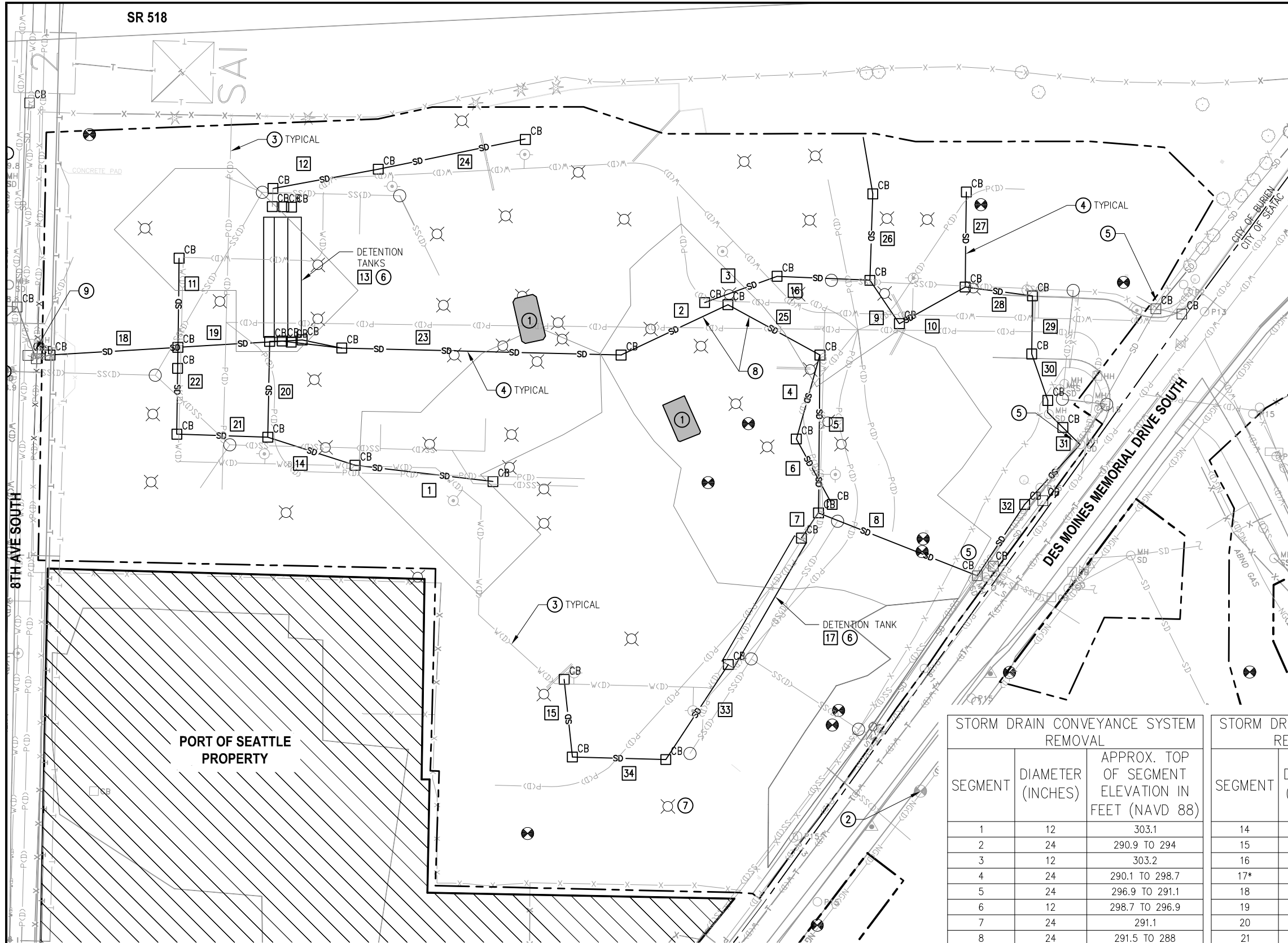


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POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME:  
**2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS**  
SHEET TITLE:  
**LLA CLEARING, GRUBBING,  
AND SURFACE DEMOLITION PLAN**

POS WORK PROJECT NUMBER  
**104396, 104396**  
CONSULTANT'S PROJECT NUMBER  
**POS-LLA/POS-LL**  
POS PROJECT TRACKING NUMBER  
**STIA-1701 CB01.1**



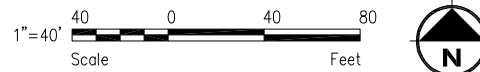
**NOTES**

- 1 SWIMMING POOL PREVIOUSLY ABANDONED IN PLACE, FILLED WITH GRAVEL, TO BE REMOVED.
- 2 MONITORING WELL TO BE PROTECTED.
- 3 ALL UTILITIES EXCEPT STORM DRAIN HAVE BEEN DISCONNECTED. NO ONSITE UTILITIES REMAIN ACTIVE. UTILITIES IN THE RIGHT OF WAY ARE ACTIVE. CONTRACTOR TO REMOVE UNDERGROUND OBSTRUCTIONS AS NEEDED TO COMPLETE WORK.
- 4 EXPECTED STORM DRAIN LINES TO BE REMOVED ARE DETAILED IN TABLE. STORM DRAIN LINES TO BE REMOVED ARE CORRUGATED STEEL, EXCEPT WHERE NOTED.
- 5 CUT AND CAP STORM DRAIN LINES DOWNSTREAM OF SITE. OFFSITE STORM DRAIN SYSTEM TO REMAIN ACTIVE.
- 6 EXPECTED DETENTION TANKS TO BE REMOVED ARE DETAILED IN TABLE. PIPE SEGMENT 13 CONSISTS OF THREE 54-INCH DIAMETER DETENTION TANKS. PIPE SEGMENT 17 CONSISTS OF ONE 36-INCH DIAMETER DETENTION TANK.
- 7 POWER POLES HAVE BEEN CUT AT THE GROUND LEVEL. ONLY FOUNDATIONS REMAIN
- 8 STORM DRAIN PIPE SEGMENTS 2 AND 25 ARE CONCRETE.
- 9 STORM DRAIN SYSTEM DISCONNECTED FROM MAIN LINE UPSTREAM OF SITE. WORK PERFORMED BY OTHERS.

**LEGEND:**

- PROJECT WORK AREA LIMITS
- EXISTING MONITORING WELLS TO BE DECOMMISSIONED
- EXISTING STORM DRAIN LINE
- EXISTING CATCH BASIN
- EXISTING STORM DRAIN LINE - TO BE REMOVED
- EXISTING CATCH BASIN - TO BE REMOVED
- SOIL EXCAVATION AREAS
- EXISTING FENCE
- STAGING AREA
- POWER
- WATER
- NATURAL GAS
- SANITARY SEWER
- TELEPHONE
- POWER POLE FOUNDATIONS - TO BE REMOVED
- EXISTING SANITARY SEWER MANHOLE - TO BE REMOVED
- FIRE HYDRANT - TO BE PROTECTED

**PLAN**  
LLA SUBSURFACE DEMOLITION PLAN  
SCALE: 1" = 40'



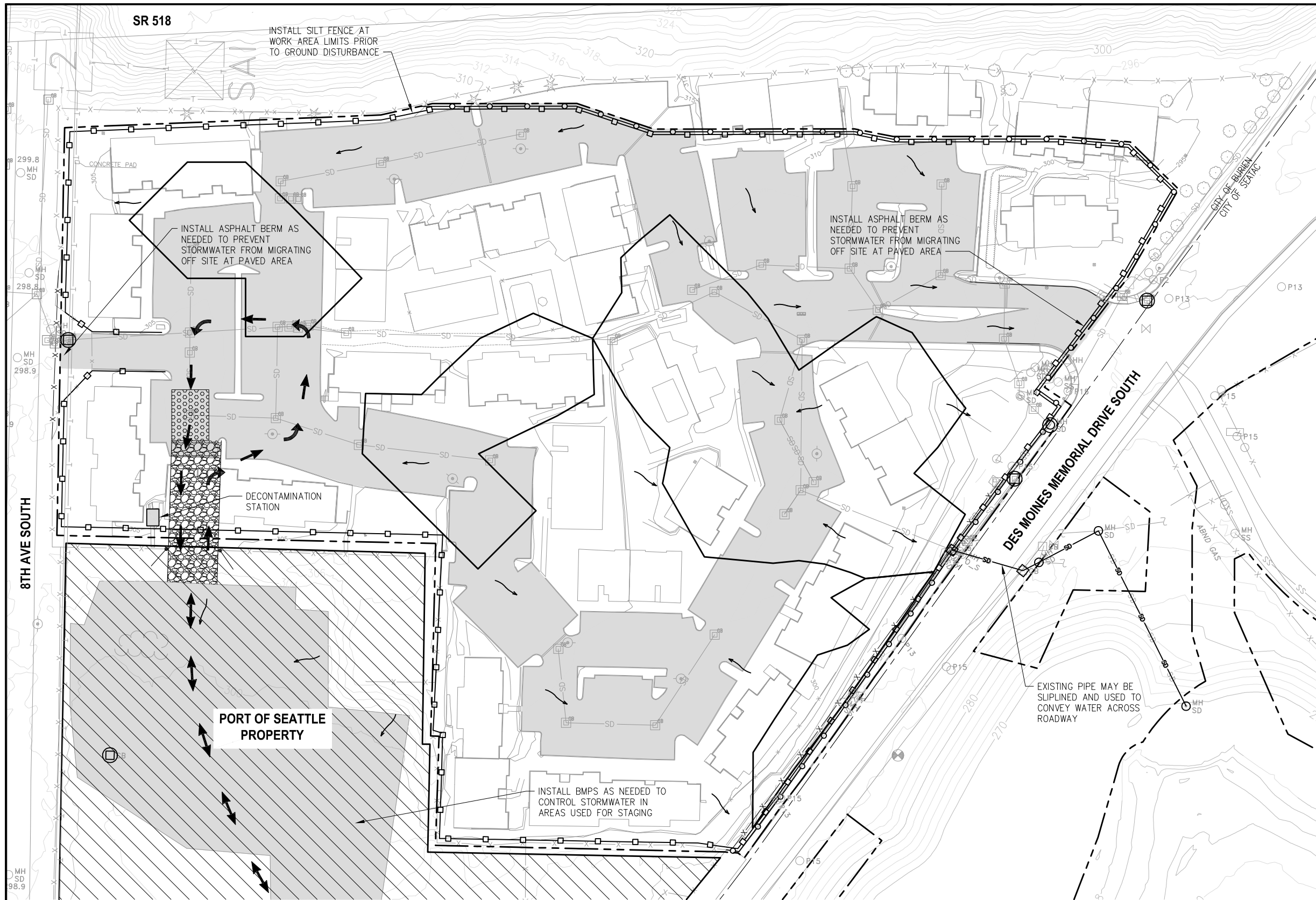
STORM DRAIN CONVEYANCE SYSTEM REMOVAL		
SEGMENT	DIAMETER (INCHES)	APPROX. TOP OF SEGMENT ELEVATION IN FEET (NAVD 88)
1	12	303.1
2	24	290.9 TO 294
3	12	303.2
4	24	290.1 TO 298.7
5	24	296.9 TO 291.1
6	12	298.7 TO 296.9
7	24	291.1
8	24	291.5 TO 288
9	12	297
10	12	297
11	12	301.6
12	12	302.1
13*	3x54	302.1

STORM DRAIN CONVEYANCE SYSTEM REMOVAL CONTINUE		
SEGMENT	DIAMETER (INCHES)	APPROX. TOP OF SEGMENT ELEVATION IN FEET (NAVD 88)
14	12	300.2 TO 302.3
15	12	302.4
16	12	303.2 TO 301
17*	36	297
18	24	294.4 TO 297.4
19	24	297.4 TO 300
20	12	300 TO 300.2
21	12	300.2 TO 299.8
22	12	299.8 TO 297.4
23	24	294.8 TO 293.4
24	12	302.1 TO 306.5
25	24	289.4 TO 289.1
26	12	296 TO 302.2

STORM DRAIN CONVEYANCE SYSTEM REMOVAL CONTINUE		
SEGMENT	DIAMETER (INCHES)	APPROX. TOP OF SEGMENT ELEVATION IN FEET (NAVD 88)
27	12	294.5 TO 293.4
28	12	293.4 TO 288.8
29	12	288.8 TO 286
30	12	286
31	12	288
32	12	288
33	12	293.3 TO 293.5
34	12	293.5 TO 298.4

\* SEGMENTS 13 AND 17 ARE STORM DRAIN DETENTION TANKS - TO BE REMOVED

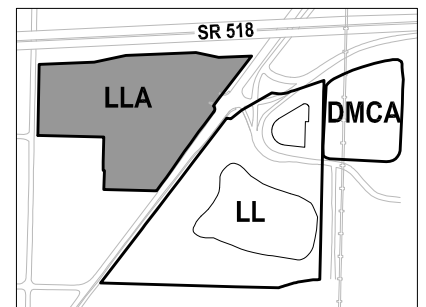
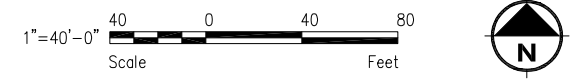
REVISIONS					
NO.	DATE	BY	DESCRIPTION	APP'D	NO.



- NOTES:**
1. CONTRACTOR TO UPDATE TESC PLAN AS PART OF SWPPP PRE-CONSTRUCTION SUBMITTAL.
  2. BMPs SHOWN ARE MINIMUM REQUIREMENTS. INSTALL ADDITIONAL BMPs AS NECESSARY SO THAT NO UNCONTROLLED STORMWATER OR DEWATERING WATER LEAVES THE SITE.
  3. SOIL STOCKPILING AND WATER TREATMENT EQUIPMENT MAY OCCUR IN COMMON EXCAVATION AREAS. STOCKPILE BMPs ARE DETAILED IN THE SPECIFICATIONS.
  4. ALL CONSTRUCTION STORMWATER AND EXCAVATION DEWATERING WATER WILL BE CHEMICALLY TREATED AND THEN DISCHARGED TO THE SR 518 CONSTRUCTION STORMWATER POND FOR INFILTRATION WITH CONTINGENCY OVERFLOW DISCHARGE TO MILLER CREEK VIA AN EXISTING VEGETATED SWALE, SEE SHEET CE02.1.

- LEGEND:**
- PROJECT WORK AREA LIMITS
  - SILT FENCE
  - TEMPORARY CONSTRUCTION FENCE
  - CATCH BASIN INLET PROTECTION
  - ◻ WHEEL WASH
  - ◻ SOIL EXCAVATION AREAS
  - ▨ STAGING AREA
  - ON-SITE ASPHALT PAVEMENT
  - SD- STORMWATER DRAINAGE LINE
  - ↷ GENERAL DIRECTION OF SURFACE FLOW
  - 270- ELEVATION CONTOUR IN FEET (NAVD 88)
  - - - SUPPORT ZONE
  - x-x- EXISTING FENCE
  - ◻ GRAVEL PAD (12" MIN)

**PLAN**  
LLA TEMPORARY EROSION AND SEDIMENT CONTROL PLAN  
SCALE: 1" = 40'



**KEY MAP**  
NTS

**FLOYD | SNIDER**  
strategy • science • engineering

**kpff**

PROJECT ENGR./ARCH: MEGAN KING  
DESIGNER: MMK  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: USM  
CHECKED/APPROVED BY: MMK



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT

PROJECT NAME: **2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS**

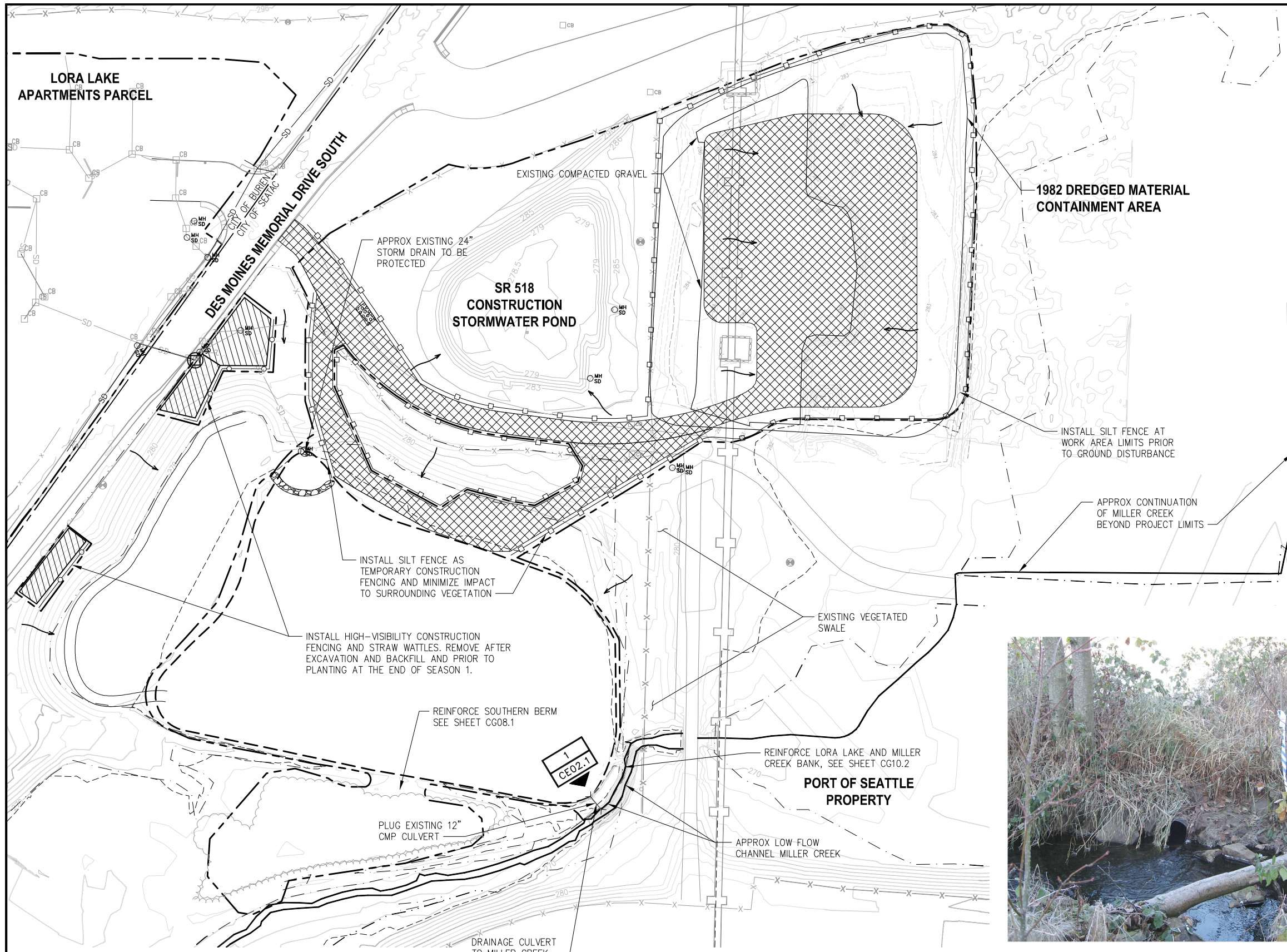
SHEET TITLE: **LLA TEMPORARY EROSION AND SEDIMENT CONTROL PLAN - MINIMUM REQUIREMENTS**

POS WORK PROJECT NUMBER: **104396, 104396**

CONSULTANT'S PROJECT NUMBER: **POS-LLA/POS-LL**

POS PROJECT TRACKING NUMBER: **STIA-1701 CE01.1**



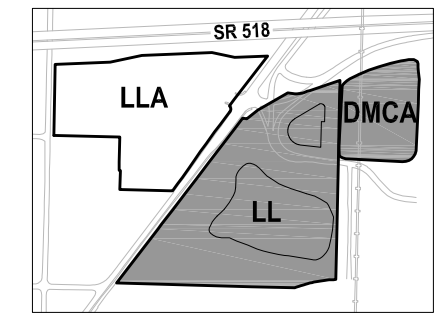


- TESC NOTES:**
1. VEGETATION OUTSIDE OF IDENTIFIED ACCESS AND HAUL ROUTES AND SOIL EXCAVATION AREAS TO BE PROTECTED.
  2. SURFACE COMPLETION OCCURS FIRST PRIOR TO USE AS CONSTRUCTION ACCESS AND STAGING AREA.
  3. SOIL STOCKPILING ALLOWED IN CONSTRUCTION ACCESS AND STAGING AREAS ONLY. STOCKPILE BMP'S ARE DETAILED IN THE PROJECT SPECIFICATIONS.
  4. ALL CONSTRUCTION STORMWATER, LAKE DEWATERING AND EXCAVATION DEWATERING WATER WILL BE CHEMICALLY TREATED AND THEN DISCHARGED TO THE SR 518 CONSTRUCTION STORMWATER POND FOR INFILTRATION WITH CONTINGENCY OVERFLOW DISCHARGE TO MILLER CREEK VIA AN EXISTING VEGETATED SWALE. SEE SHEET CE02.1.

- LEGEND:**
- PROJECT WORK AREA LIMITS
  - SILT FENCE
  - HIGH VISIBILITY CONSTRUCTION FENCING AND STRAW WATTLES
  - ▨ WHEEL WASH
  - ▩ CONSTRUCTION ACCESS AND STAGING AREA
  - ▧ SOIL EXCAVATION AREAS
  - LORA LAKE CLEANUP AREA
  - 270— ELEVATION CONTOUR IN FEET (NAVD 88)
  - - - RESTRICTIVE COVENANT BOUNDARY
  - · - · - WETLAND BOUNDARY
  - x - x - EXISTING FENCE
  - - - 100-YEAR FLOOD PLAIN BOUNDARY
  - SURFACE FLOW
  - SD STORMWATER DRAINAGE LINE
  - CATCH BASIN INLET PROTECTION
  - · - · - HIGH VISIBILITY FENCE AND ECOLOGY BLOCK TEMPORARY PROTECTION

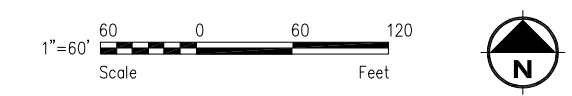


**PHOTO**  
LL AND DMCA TEMPORARY EROSION AND SEDIMENT CONTROL PLAN CREEK DRAINAGE CULVERT  
1/CE02.1



**KEY MAP**  
NTS

**PLAN**  
LL AND DMCA TEMPORARY EROSION AND SEDIMENT CONTROL PLAN  
SCALE: 1" = 60'

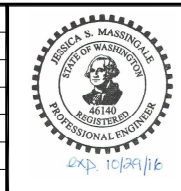


REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

**FLOYD | SNIDER**  
strategy • science • engineering

**kpff**

PROJECT ENGR./ARCH:  
JESSI MASSINGALE  
DESIGNER:  
JSM  
DRAWN BY:  
JKH  
SCALE:  
AS SHOWN  
DATE:  
8/29/2016  
CHECKED BY:  
MMK  
CHECKED/APPROVED BY:  
MMK



POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT

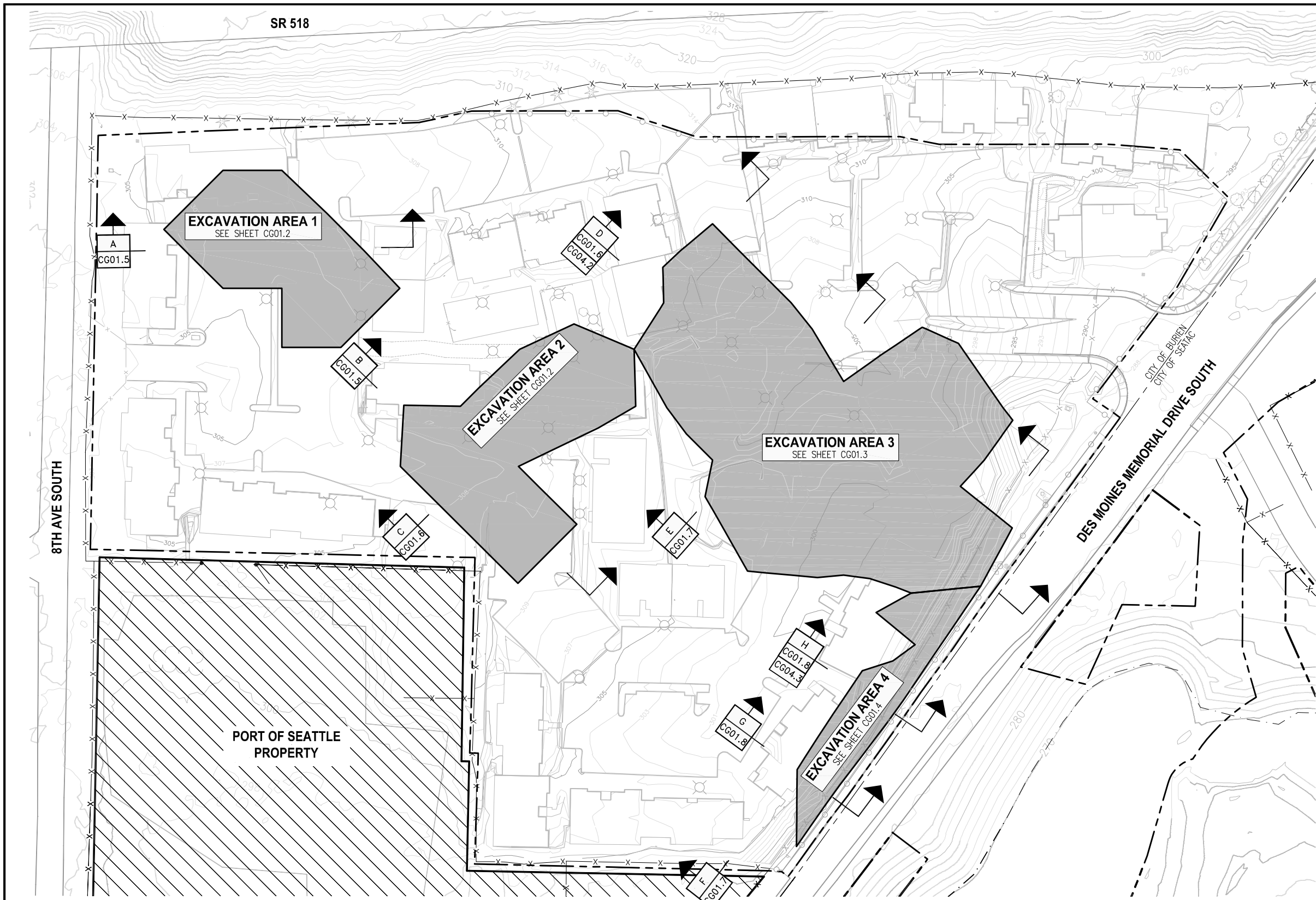
PROJECT NAME:  
**2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS**

SHEET TITLE:  
**LL AND DMCA TEMPORARY EROSION AND SEDIMENT CONTROL PLAN - MINIMUM REQUIREMENTS**

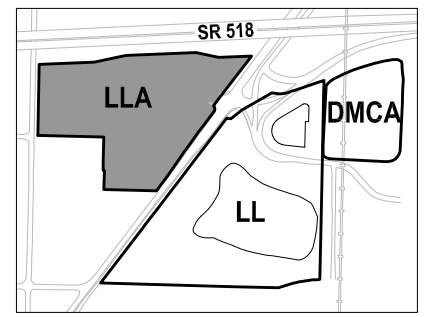
POS WORK PROJECT NUMBER  
**104396, 104396**

CONSULTANT'S PROJECT NUMBER  
**POS-LLA/POS-LL**

POS PROJECT TRACKING NUMBER  
**STIA-1701 CE02.1**



- LEGEND:**
- PROJECT WORK AREA LIMITS
  - CONTAMINATED SOIL EXCAVATION AREA
  - ELEVATION CONTOUR IN FEET (NAVD 88)
  - EXISTING FENCE
  - STAGING AREA
  - TEMPORARY CONSTRUCTION FENCE
  - PERMANENT GATE - TO BE INSTALLED



**PLAN**  
LLA EXCAVATION PLAN  
SCALE: 1" = 40'



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PROJECT ENGR./ARCH: MEGAN KING  
DESIGNER: MMK  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: JSM  
CHECKED/APPROVED BY: MMK



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

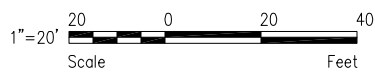
**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME: 2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS  
SHEET TITLE: LLA EXCAVATION PLAN

POS WORK PROJECT NUMBER: 104396, 104396  
CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER: STIA-1701 CG01.1





**PLAN**  
LLA EXCAVATION PLAN - AREAS 1 AND 2  
SCALE: 1" = 20'



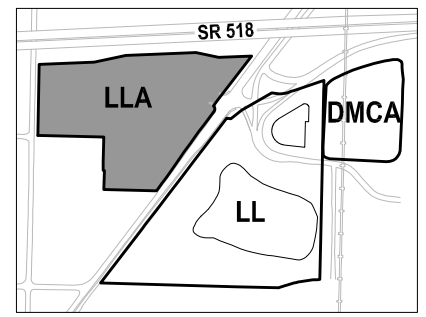
LLA EXCAVATION AREA 1 CONTROL POINTS		
Point #	Northing	Easting
1	174801.10	1271966.40
2	174828.10	1271993.50
3	174773.00	1271994.60
4	174756.10	1272011.40
5	174846.10	1272011.40
6	174800.00	1272021.60
7	174846.10	1272032.00
8	174756.10	1272034.20
9	174771.70	1272049.90
10	174828.30	1272049.90
11	174711.10	1272056.40
12	174721.70	1272056.40
13	174756.10	1272056.40
14	174846.10	1272056.40
15	174840.60	1272062.20
16	174743.40	1272078.10
17	174800.00	1272078.10
18	174813.00	1272091.10
19	174711.10	1272101.40
20	174715.60	1272106.00
21	174771.70	1272106.40
22	174784.60	1272119.30
23	174743.90	1272134.20
24	174756.10	1272146.40

LLA EXCAVATION AREA 2 CONTROL POINTS		
Point #	Northing	Easting
25	174620.30	1272146.80
26	174667.00	1272149.40
27	174666.80	1272159.00
28	174649.60	1272176.20
29	174590.00	1272177.40
30	174666.10	1272192.70
31	174619.20	1272206.60
32	174680.00	1272206.60
33	174559.70	1272207.80
34	174531.00	1272236.50
35	174620.20	1272236.90
36	174588.80	1272237.00
37	174649.60	1272237.00
38	174709.60	1272237.90
39	174604.50	1272252.70
40	174629.80	1272256.80
41	174560.20	1272265.60
42	174680.00	1272267.40
43	174729.00	1272279.30
44	174576.10	1272281.40
45	174649.60	1272297.80
46	174710.40	1272297.80
47	174718.00	1272305.30
48	174709.60	1272325.20
49	174682.30	1272326.00
50	174677.90	1272326.10
51	174666.10	1272326.40

**NOTES:**  
1. SEE SHEET CB01.2 FOR UTILITY DEMOLITION.

**LEGEND:**

	PROJECT WORK AREA LIMITS		POWER
	CONTAMINATED SOIL EXCAVATION AREA		WATER
	EXCAVATION DEPTH ELEVATION IN FEET (NAVD 88)		NATURAL GAS
	CONTROL POINT		SANITARY SEWER
	FENCE		TELEPHONE



**KEY MAP**  
NTS

**FLOYD | SNIDER**  
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**kpff**

PROJECT ENGR./ARCH: MEGAN KING  
DESIGNER: MMK  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: USM  
CHECKED/APPROVED BY: MMK



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT

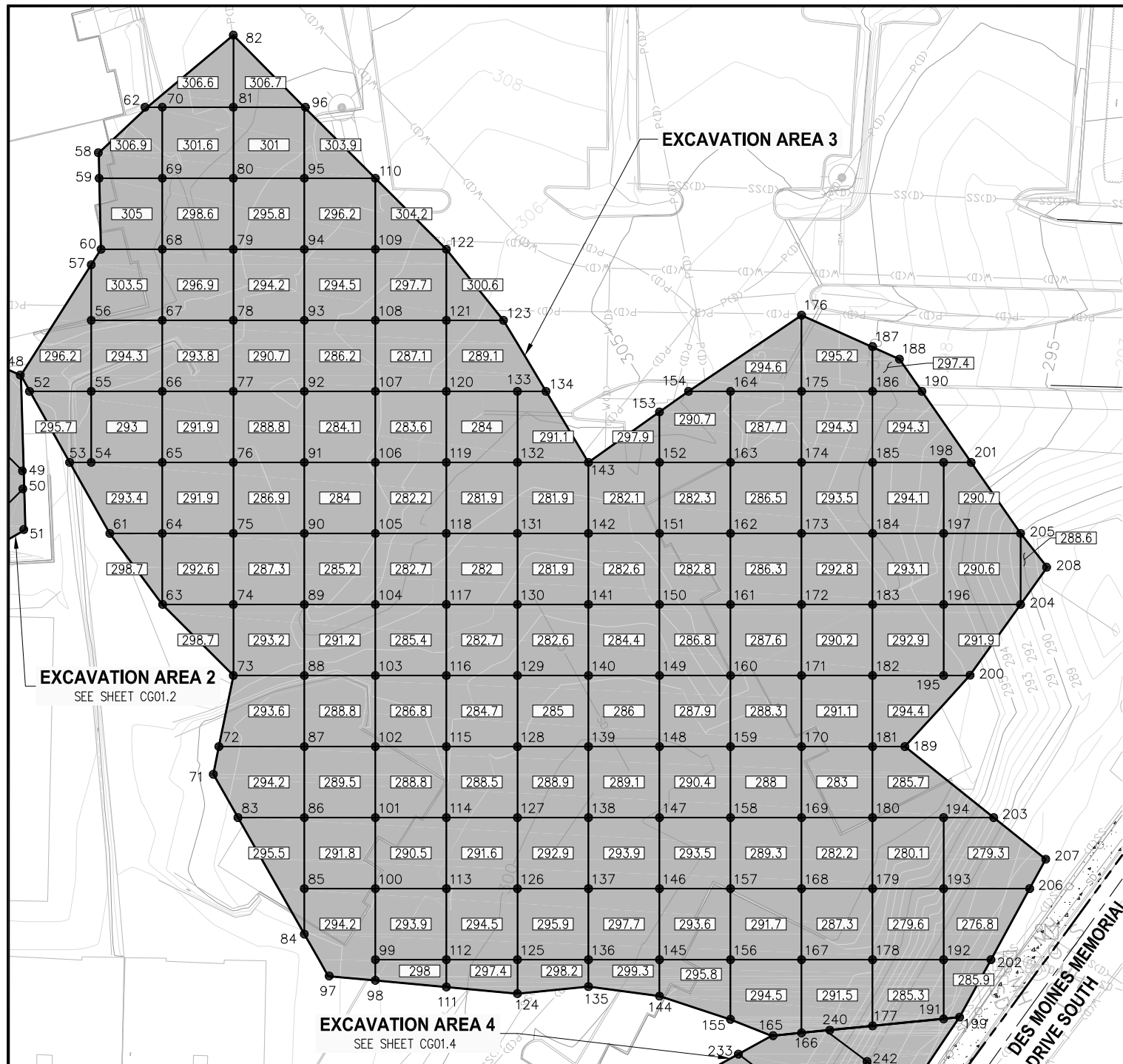
PROJECT NAME: **2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS**

SHEET TITLE: **LLA EXCAVATION PLAN - EXCAVATION AREAS 1 AND 2**

POS WORK PROJECT NUMBER: **104396, 104396**

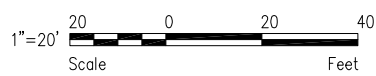
CONSULTANT'S PROJECT NUMBER: **POS-LLA/POS-LL**

POS PROJECT TRACKING NUMBER: **STIA-1701 CG01.2**



**PLAN**

LLA EXCAVATION PLAN - AREA 3  
SCALE: 1" = 20'



**LEGEND:**

- PROJECT WORK AREA LIMITS
- - - CITY BOUNDARY
- █ CONTAMINATED SOIL EXCAVATION AREA
- [000.0] EXCAVATION DEPTH ELEVATION IN FEET (NAVD 88)
- XXX CONTROL POINT
- ▨ PAVED SIDEWALK (TO BE PROTECTED)
- P(D)- POWER
- W(D)- WATER
- NG(D)- NATURAL GAS
- SS(D)- SANITARY SEWER
- T-T- TELEPHONE
- TEMPORARY CONSTRUCTION FENCE

**NOTES:**

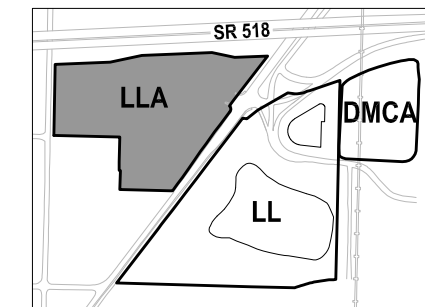
1. SEE SHEET CB01.2 FOR UTILITY DEMOLITION
2. IF ACCESSING EXCAVATION AREA FROM RIGHT OF WAY, TRAFFIC CONTROL REQUIREMENTS APPLY. SEE SHEET G04.3

LLA EXCAVATION AREA 3 CONTROL POINTS		
Point #	Northing	Easting
52	174705.00	1272327.80
53	174685.00	1272339.00
54	174685.00	1272345.00
55	174705.00	1272345.00
56	174725.00	1272345.00
57	174740.70	1272345.00
58	174772.20	1272347.10
59	174765.00	1272347.30
60	174745.00	1272347.80
61	174665.00	1272350.20
62	174785.00	1272360.80
63	174645.00	1272365.00
64	174665.00	1272365.00
65	174685.00	1272365.00
66	174705.00	1272365.00
67	174725.00	1272365.00
68	174745.00	1272365.00
69	174765.00	1272365.00
70	174785.00	1272365.00
71	174597.20	1272379.40
72	174605.00	1272381.00
73	174625.00	1272385.00
74	174645.00	1272385.00
75	174665.00	1272385.00
76	174685.00	1272385.00
77	174705.00	1272385.00
78	174725.00	1272385.00
79	174745.00	1272385.00
80	174765.00	1272385.00
81	174785.00	1272385.00
82	174805.30	1272385.00
83	174585.00	1272386.30
84	174552.20	1272405.00
85	174565.00	1272405.00
86	174585.00	1272405.00
87	174605.00	1272405.00
88	174625.00	1272405.00

LLA EXCAVATION AREA 3 CONTROL POINTS CONT'D		
Point #	Northing	Easting
89	174645.00	1272405.00
90	174665.00	1272405.00
91	174685.00	1272405.00
92	174705.00	1272405.00
93	174725.00	1272405.00
94	174745.00	1272405.00
95	174765.00	1272405.00
96	174785.00	1272405.00
97	174540.40	1272411.70
98	174539.10	1272425.00
99	174545.00	1272425.00
100	174565.00	1272425.00
101	174585.00	1272425.00
102	174605.00	1272425.00
103	174625.00	1272425.00
104	174645.00	1272425.00
105	174665.00	1272425.00
106	174685.00	1272425.00
107	174705.00	1272425.00
108	174725.00	1272425.00
109	174745.00	1272425.00
110	174765.00	1272425.00
111	174537.30	1272445.00
112	174545.00	1272445.00
113	174565.00	1272445.00
114	174585.00	1272445.00
115	174605.00	1272445.00
116	174625.00	1272445.00
117	174645.00	1272445.00
118	174665.00	1272445.00
119	174685.00	1272445.00
120	174705.00	1272445.00
121	174725.00	1272445.00
122	174745.00	1272445.00
123	174725.00	1272461.00
124	174535.40	1272465.00
125	174545.00	1272465.00
126	174565.00	1272465.00
127	174585.00	1272465.00
128	174605.00	1272465.00
129	174625.00	1272465.00
130	174645.00	1272465.00
131	174665.00	1272465.00
132	174685.00	1272465.00
133	174705.00	1272465.00
134	174705.00	1272473.00
135	174537.40	1272485.00

LLA EXCAVATION AREA 3 CONTROL POINTS CONT'D		
Point #	Northing	Easting
136	174545.00	1272485.00
137	174565.00	1272485.00
138	174585.00	1272485.00
139	174605.00	1272485.00
140	174625.00	1272485.00
141	174645.00	1272485.00
142	174665.00	1272485.00
143	174685.00	1272485.00
144	174534.70	1272505.00
145	174545.00	1272505.00
146	174565.00	1272505.00
147	174585.00	1272505.00
148	174605.00	1272505.00
149	174625.00	1272505.00
150	174645.00	1272505.00
151	174665.00	1272505.00
152	174685.00	1272505.00
153	174699.20	1272505.00
154	174705.00	1272513.20
155	174528.20	1272525.00
156	174545.00	1272525.00
157	174565.00	1272525.00
158	174585.00	1272525.00
159	174605.00	1272525.00
160	174625.00	1272525.00
161	174645.00	1272525.00
162	174665.00	1272525.00
163	174685.00	1272525.00
164	174705.00	1272525.00
165	174523.60	1272536.60
166	174524.40	1272545.00
167	174545.00	1272545.00
168	174565.00	1272545.00
169	174585.00	1272545.00
170	174605.00	1272545.00
171	174625.00	1272545.00
172	174645.00	1272545.00
173	174665.00	1272545.00
174	174685.00	1272545.00
175	174705.00	1272545.00
176	174726.40	1272545.00
177	174526.40	1272565.00
178	174545.00	1272565.00
179	174565.00	1272565.00
180	174585.00	1272565.00
181	174605.00	1272565.00
182	174625.00	1272565.00

LLA EXCAVATION AREA 3 CONTROL POINTS CONT'D		
Point #	Northing	Easting
183	174645.00	1272565.00
184	174665.00	1272565.00
185	174685.00	1272565.00
186	174705.00	1272565.00
187	174717.50	1272565.00
188	174714.10	1272572.60
189	174605.00	1272574.10
190	174705.00	1272578.90
191	174528.40	1272585.00
192	174545.00	1272585.00
193	174565.00	1272585.00
194	174585.00	1272585.00
195	174625.00	1272585.00
196	174645.00	1272585.00
197	174665.00	1272585.00
198	174685.00	1272585.00
199	174528.80	1272589.50
200	174625.00	1272592.40
201	174685.00	1272592.80
202	174545.00	1272598.30
203	174585.00	1272599.10
204	174645.00	1272606.70
205	174665.00	1272606.70
206	174565.00	1272609.20
207	174573.30	1272613.80
208	174655.50	1272614.10



**KEY MAP**  
NTS

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PROJECT ENGR./ARCH: MEGAN KING  
DESIGNER: MMK  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: JSM  
CHECKED/APPROVED BY: MMK

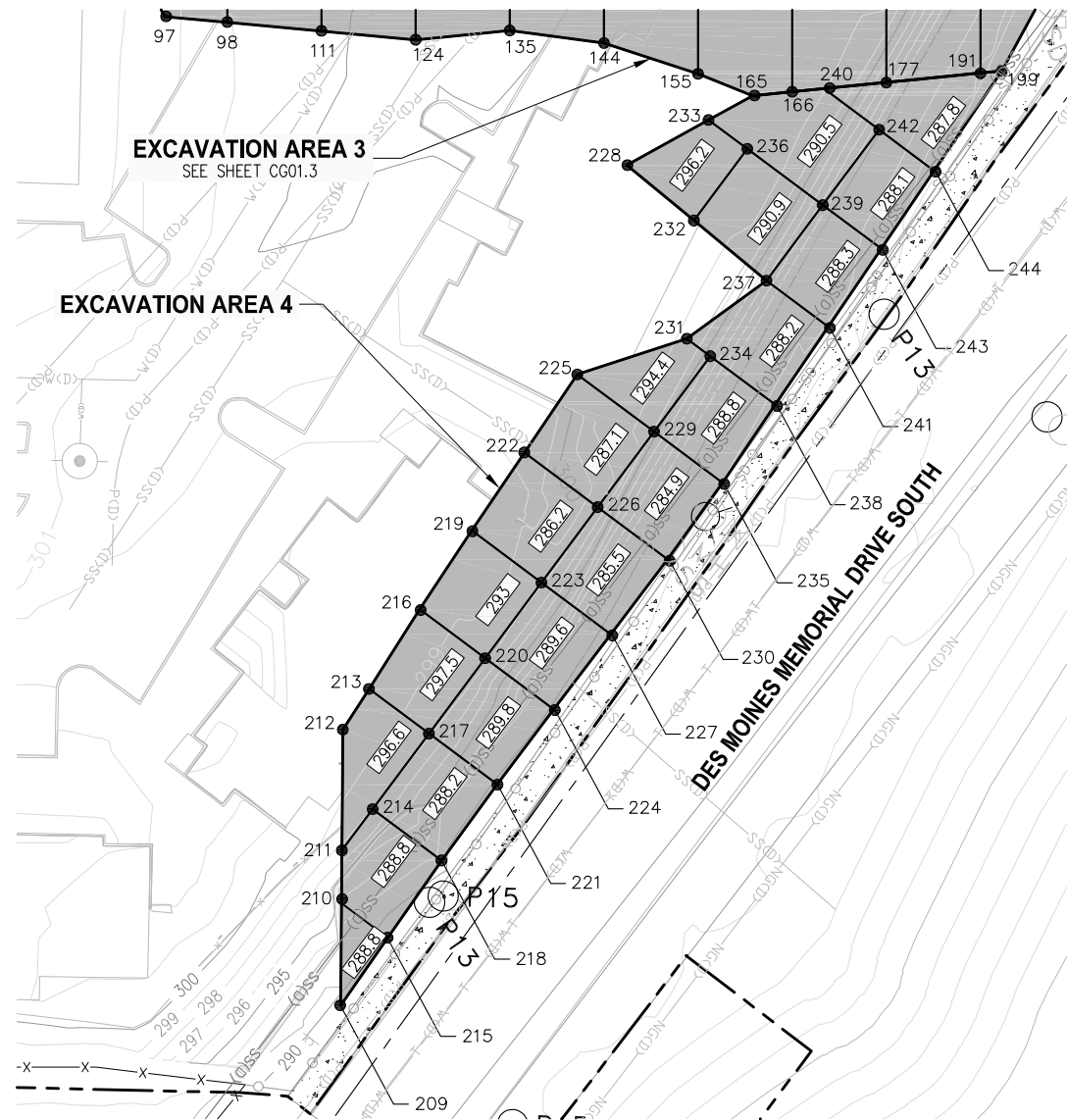


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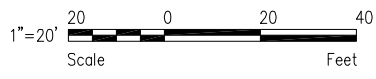
POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME: 2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS  
SHEET TITLE: LLA EXCAVATION PLAN - EXCAVATION AREA 3

POS WORK PROJECT NUMBER: 104396, 104396  
CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER: STIA-1701 CG01.3



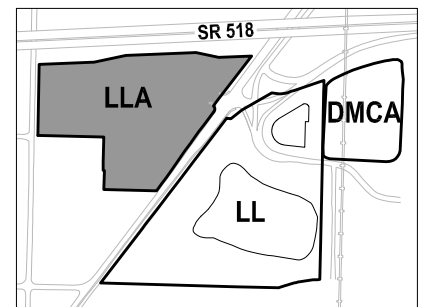
**PLAN**  
LLA EXCAVATION PLAN - AREA 4  
SCALE: 1" = 20'



LLA EXCAVATION AREA 4 CONTROL POINTS		
POINT #	NORTHING	EASTING
209	174330.30	1272449.10
210	174352.00	1272449.20
211	174363.30	1272449.30
212	174388.90	1272449.50
213	174397.60	1272455.10
214	174372.00	1272455.90
215	174344.70	1272459.10
216	174414.50	1272465.90
217	174388.10	1272467.80
218	174361.10	1272470.50
219	174431.20	1272476.90
220	174404.10	1272479.80
221	174377.30	1272482.30
222	174447.80	1272488.10
223	174420.10	1272491.70
224	174393.20	1272494.40
225	174464.30	1272499.30
226	174436.20	1272503.70
227	174409.20	1272506.40
228	174508.80	1272509.90
229	174452.20	1272515.60
230	174425.10	1272518.50
231	174471.90	1272522.60
232	174497.00	1272524.10
233	174518.40	1272527.20
234	174468.20	1272527.60
235	174441.40	1272530.20
236	174512.30	1272535.50
237	174484.30	1272539.50
238	174457.90	1272541.40
239	174500.30	1272551.50
240	174525.10	1272551.70
241	174474.50	1272552.70
242	174516.30	1272563.40
243	174491.10	1272563.90
244	174507.60	1272575.10

- NOTES:**
- SEE SHEET CB01.2 FOR UTILITY DEMOLITION.
  - IF ACCESSING EXCAVATION AREAS FROM RIGHT OF WAY, TRAFFIC CONTROL REQUIREMENTS APPLY. SEE SHEET G04.3.
  - POWER LINE IN RIGHT OF WAY IS OVERHEAD.

- LEGEND:**
- PROJECT WORK AREA LIMITS
  - █ CONTAMINATED SOIL EXCAVATION AREA
  - 000.0 EXCAVATION DEPTH ELEVATION IN FEET (NAVD 88)
  - XXX CONTROL POINT
  - SD STORM DRAIN LINES
  - P(D) POWER
  - W(D) WATER
  - NG(D) NATURAL GAS
  - SS(D) SANITARY SEWER
  - T TELEPHONE
  - TEMPORARY CONSTRUCTION FENCE
  - ▨ PAVED SIDEWALK (TO BE PROTECTED)
  - - - CITY BOUNDARY
  - P13 OVERHEAD POWER POLE - TO BE PROTECTED
  - ⊗ FIRE HYDRANT - TO BE PROTECTED



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PROJECT ENGR./ARCH:  
MEGAN KING  
DESIGNER:  
MMK  
DRAWN BY:  
JKH  
SCALE:  
AS SHOWN  
DATE:  
8/29/2016  
CHECKED BY:  
JSM  
CHECKED/APPROVED BY:  
MMK



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

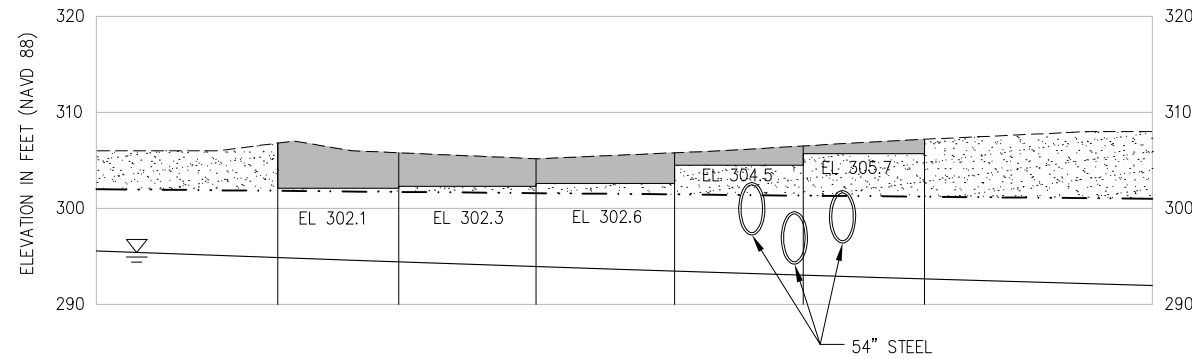
**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME:  
**2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS**  
SHEET TITLE:  
**LLA EXCAVATION PLAN - EXCAVATION  
AREA 4**

POS WORK PROJECT NUMBER:  
**104396, 104396**  
CONSULTANT'S PROJECT NUMBER:  
POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER:  
STIA-1701 CG01.4



**NOTES:**

1. GROUNDWATER ELEVATIONS VARY SEASONALLY. GROUNDWATER ELEVATION SHOWN IS THE APPROXIMATE DRY SEASON ELEVATION.
2. EXCAVATION SECTIONS SHOWN ARE POST CLEARING AND GRUBBING,
3. SEE SHEET CB01.2 FOR UTILITY DEMOLITION



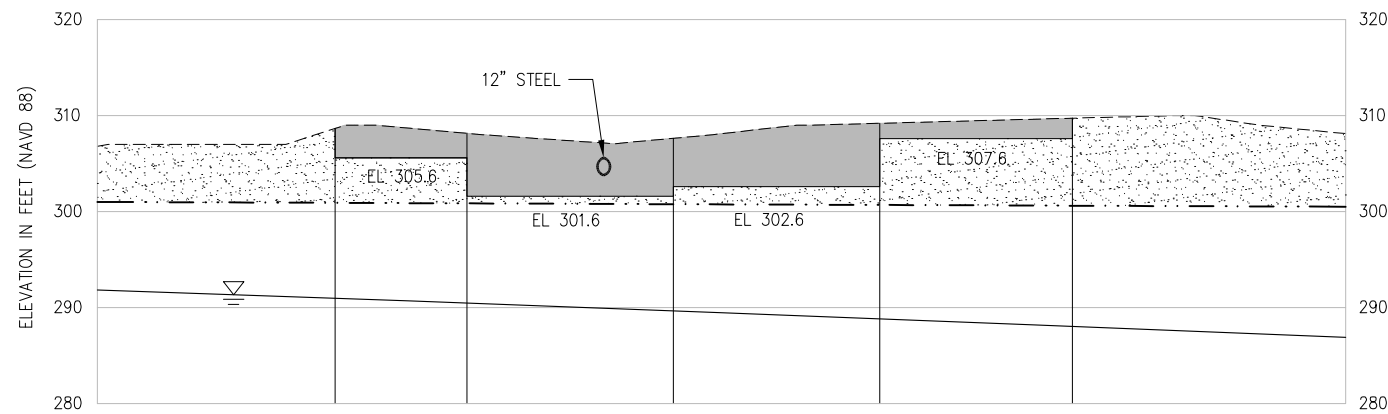
**SECTION**

LLA EXCAVATION SECTION  
 SCALE: H: 1" = 20'  
 V: 1" = 10'

A
CG01.1

**LEGEND:**

- EXISTING GROUND SURFACE
- STORM DRAIN SYSTEM – TO BE REMOVED
- ▽ APPROXIMATE GROUNDWATER ELEVATION IN FEET (NAVD 88)
- █ EXCAVATION OF CONTAMINATED SOIL
- DETENTION TANKS – TO BE REMOVED
- FINAL GRADE
- ▨ COMMON EXCAVATION



**SECTION**

LLA EXCAVATION SECTION  
 SCALE: H: 1" = 20'  
 V: 1" = 10'

B
CG01.1

**FLOYD | SNIDER**  
 strategy • science • engineering



PROJECT ENGR./ARCH: MEGAN KING  
 DESIGNER: MMK  
 DRAWN BY: JKH  
 SCALE: AS SHOWN  
 DATE: 8/29/2016  
 CHECKED BY: JSM  
 CHECKED/APPROVED BY: MMK



REVISIONS							
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY

POS PROJECT MANAGER:  
 POS PROJECT ENGINEER:  
 POS DESIGN ENGINEER:  
 POS DRAFTER:  
 POS SCALE:  
 POS DATE:  
 POS CHECKED/APPROVED BY:

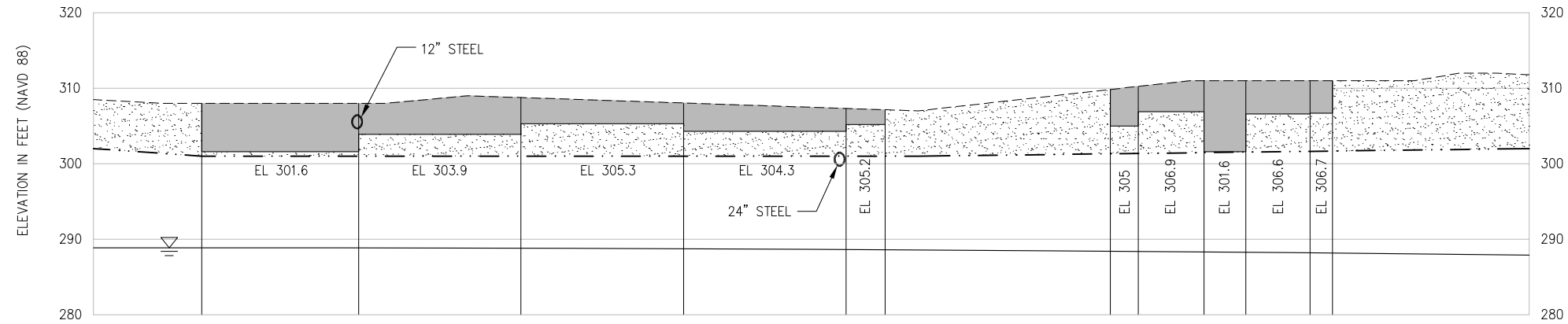


SEA-TAC INTERNATIONAL AIRPORT  
 2017 LORA LAKE APARTMENTS  
 MTCA REMEDIATION PROJECTS  
 SHEET TITLE: LLA EXCAVATION SECTIONS A AND B

POS WORK PROJECT NUMBER: 104396, 104396  
 CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
 POS PROJECT TRACKING NUMBER: STIA-1701 CG01.5

**NOTES:**

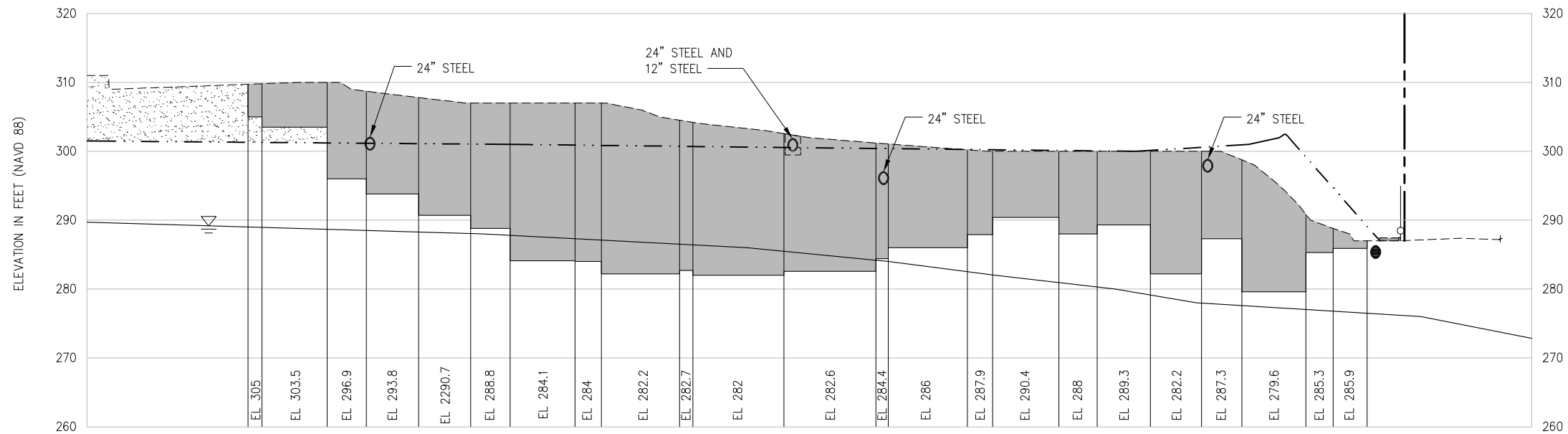
1. TEMPORARY CONSTRUCTION FENCE WILL BE USED WHILE WORKING ADJACENT TO DES MOINES MEMORIAL DRIVE SOUTH AND SIDEWALK WILL BE CLOSED.
2. GROUNDWATER ELEVATIONS VARY SEASONALLY. GROUNDWATER ELEVATION SHOWN IS THE APPROXIMATE DRY SEASON ELEVATION.
3. EXCAVATION SECTIONS SHOWN ARE POST CLEARING AND GRUBBING. ROOT MASSES TO BE DISPOSED OF AT SUBTITLE D LANDFILL.
4. SEE SHEET CB01.2 FOR UTILITY DEMOLITION



**SECTION C**  
 LLA EXCAVATION SECTION  
 SCALE: H: 1" = 20'  
 V: 1" = 10'

**LEGEND:**

- PROJECT WORK AREA LIMITS
- - - - - EXISTING GROUND SURFACE
- STORM DRAIN SYSTEM - TO BE REMOVED
- CATCH BASIN - TO BE REMOVED
- TEMPORARY CONSTRUCTION FENCE
- ▽ APPROXIMATE GROUNDWATER ELEVATION IN FEET (NAVD 88)
- █ EXCAVATION OF CONTAMINATED SOIL
- ▬ PAVED SIDEWALK - TO BE PROTECTED
- · - · - · - FINAL GRADE
- ▨ COMMON EXCAVATION

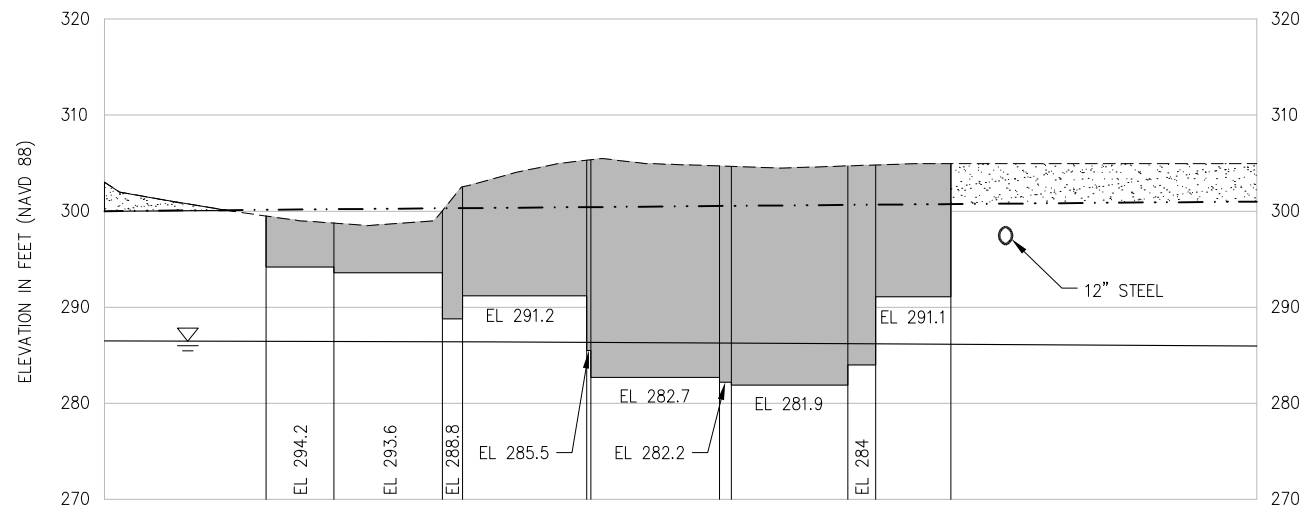


**SECTION D**  
 LLA EXCAVATION SECTION  
 SCALE: H: 1" = 20'  
 V: 1" = 10'

REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

**NOTES:**

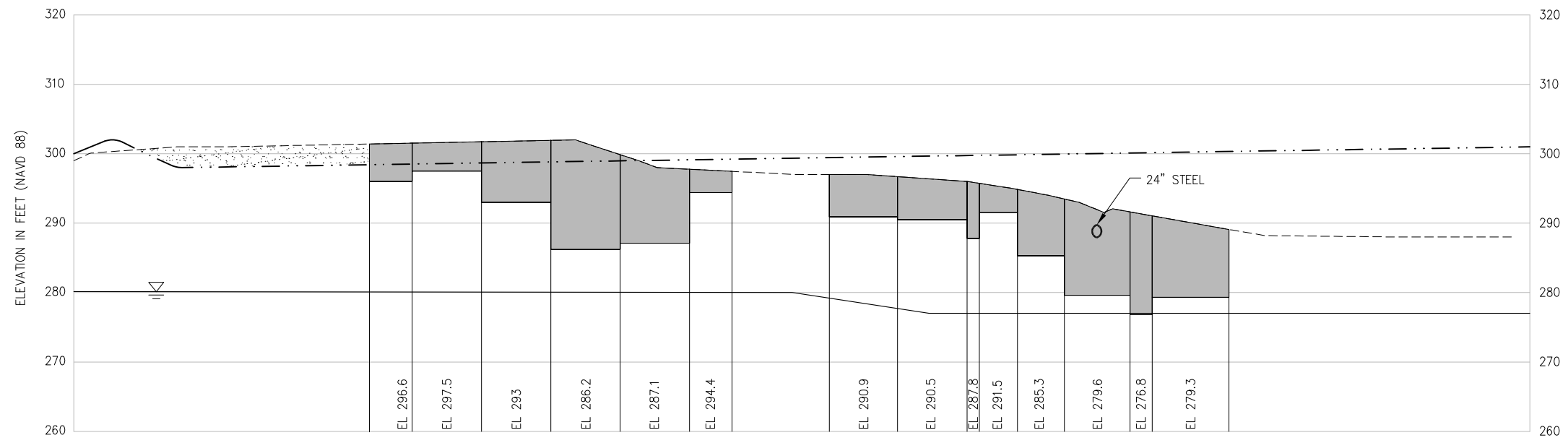
1. GROUNDWATER ELEVATIONS VARY SEASONALLY. GROUNDWATER ELEVATION SHOWN IS THE APPROXIMATE DRY SEASON ELEVATION.
2. EXCAVATION SECTIONS SHOWN ARE POST CLEARING AND GRUBBING. ROOT MASSES TO BE DISPOSED OF AT SUBTITLE D LANDFILL.
3. SEE SHEET CB01.2 FOR UTILITY DEMOLITION.



**SECTION E**  
 LLA EXCAVATION SECTION  
 SCALE: H: 1" = 20'  
 V: 1" = 10'  
 CG01.1

**LEGEND:**

- EXISTING GROUND SURFACE
- STORM DRAIN SYSTEM - TO BE REMOVED
- ▽— APPROXIMATE GROUNDWATER ELEVATION IN FEET (NAVD 88)
- █ EXCAVATION OF CONTAMINATED SOIL
- FINAL GRADE
- ▨ COMMON EXCAVATION



**SECTION F**  
 LLA EXCAVATION SECTION  
 SCALE: H: 1" = 20'  
 V: 1" = 10'  
 CG01.1


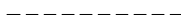



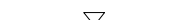







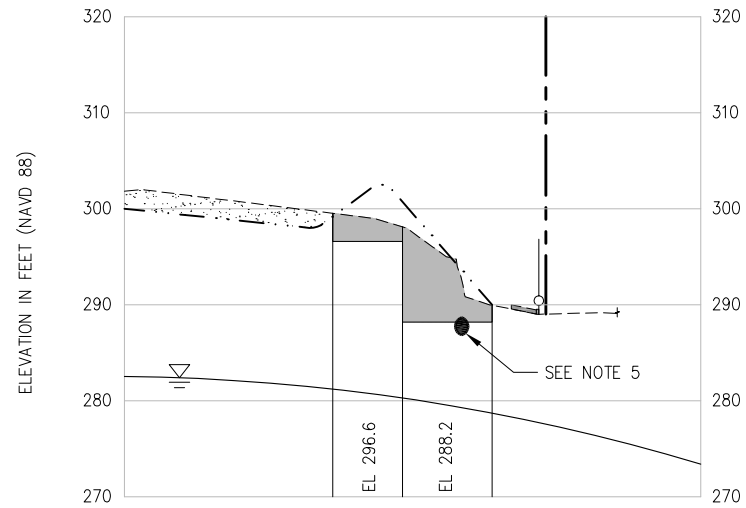
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**NOTES:**

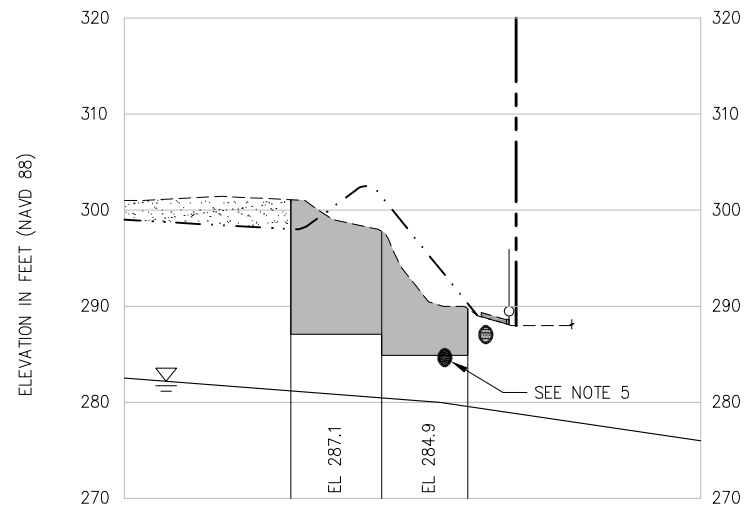
1. TEMPORARY CONSTRUCTION FENCE WILL BE USED WHILE WORKING ADJACENT TO DES MOINES MEMORIAL DRIVE SOUTH AND SIDEWALK WILL BE CLOSED.
2. GROUNDWATER ELEVATIONS VARY SEASONALLY. GROUNDWATER ELEVATION SHOWN IS THE APPROXIMATE DRY SEASON ELEVATION.
3. EXCAVATION SECTIONS SHOWN ARE POST CLEARING AND GRUBBING. ROOT MASSES TO BE DISPOSED OF AT SUBTITLE D LANDFILL.
4. SEE SHEET CB01.2 FOR UTILITY DEMOLITION
5. DEPTH OF SANITARY SEWER LINES UNKNOWN. CONTRACTOR TO LOCATE PRIOR TO EXCAVATION.

**LEGEND:**

-  PROJECT WORK AREA LIMIT
-  EXISTING GROUND SURFACE
-  STORM DRAIN SYSTEM - TO BE REMOVED
-  TEMPORARY CONSTRUCTION FENCE
-  APPROXIMATE GROUNDWATER ELEVATION IN FEET (NAVD 88)
-  EXCAVATION OF CONTAMINATED SOIL
-  STORM DRAIN SYSTEM - TO REMAIN
-  PAVED SIDEWALK - TO BE PROTECTED
-  FINAL GRADE
-  COMMON EXCAVATION
-  ACTIVE UTILITIES TO REMAIN



**SECTION G**  
 LLA EXCAVATION SECTION  
 SCALE: H: 1" = 20'  
 V: 1" = 10'



**SECTION H**  
 LLA EXCAVATION SECTION  
 SCALE: H: 1" = 20'  
 V: 1" = 10'

**REVISIONS**

NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

**FLOYD | SNIDER**  
 strategy • science • engineering



PROJECT ENGR./ARCH: MEGAN KING  
 DESIGNER: MMK  
 DRAWN BY: JKH  
 SCALE: AS SHOWN  
 DATE: 8/29/2016  
 CHECKED BY: USM  
 CHECKED/APPROVED BY: MMK



POS PROJECT MANAGER:  
 POS PROJECT ENGINEER:  
 POS DESIGN ENGINEER:  
 POS DRAFTER:  
 POS SCALE:  
 POS DATE:  
 POS CHECKED/APPROVED BY:



SEA-TAC INTERNATIONAL AIRPORT  
 2017 LORA LAKE APARTMENTS  
 MTCA REMEDIATION PROJECTS  
 SHEET TITLE: LLA EXCAVATION SECTIONS G AND H

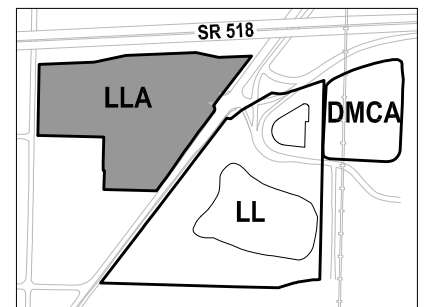
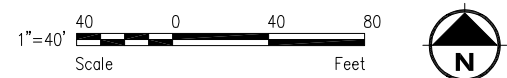
POS WORK PROJECT NUMBER: 104396, 104396  
 CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
 POS PROJECT TRACKING NUMBER: STIA-1701 CG01.8



- NOTES:**
- 1 AREAS EXPECTED TO REQUIRE DEWATERING WERE DETERMINED FROM THE WET SEASON GROUNDWATER CONTOURS GENERATED IN JANUARY 2011.
  - 2 STORMWATER DRAINAGE LINE TO BE PROTECTED MAY BE USED TO DIRECT DEWATERING WATER ACROSS ROADWAY FOR TREATMENT. TO BE COORDINATED WITH AND APPROVED BY ENGINEER. ALL CONSTRUCTION STORMWATER AND DEWATERING WATER WILL BE CHEMICALLY TREATED AND THEN DISCHARGED TO THE SR 518 CONSTRUCTION STORMWATER POND FOR INFILTRATION.
  - 3 CONTRACTOR TO INSTALL TEMPORARY PUMPS/PIPING FOR TRANSFER OF DEWATERING WATER TO THE SR 518 CONSTRUCTION STORMWATER POND. WATER FROM THE LL APARTMENTS MAY NOT DISCHARGE TO LORA LAKE.

- LEGEND:**
- AREAS EXPECTED TO REQUIRE DEWATERING
  - PROJECT WORK AREA LIMITS
  - EXISTING FENCE
  - STAGING AREA
  - SOIL EXCAVATION AREAS
  - STORM DRAIN LINES

**PLAN**  
LLA DEWATERING PLAN  
SCALE: 1" = 40'



**KEY MAP**  
NTS

**FLOYD | SNIDER**  
strategy • science • engineering  
**kpff**

PROJECT ENGR./ARCH:  
MEGAN KING  
DESIGNER:  
MMK  
DRAWN BY:  
JKH  
SCALE:  
AS SHOWN  
DATE:  
8/29/2016  
CHECKED BY:  
JSM  
CHECKED/APPROVED BY:  
MMK

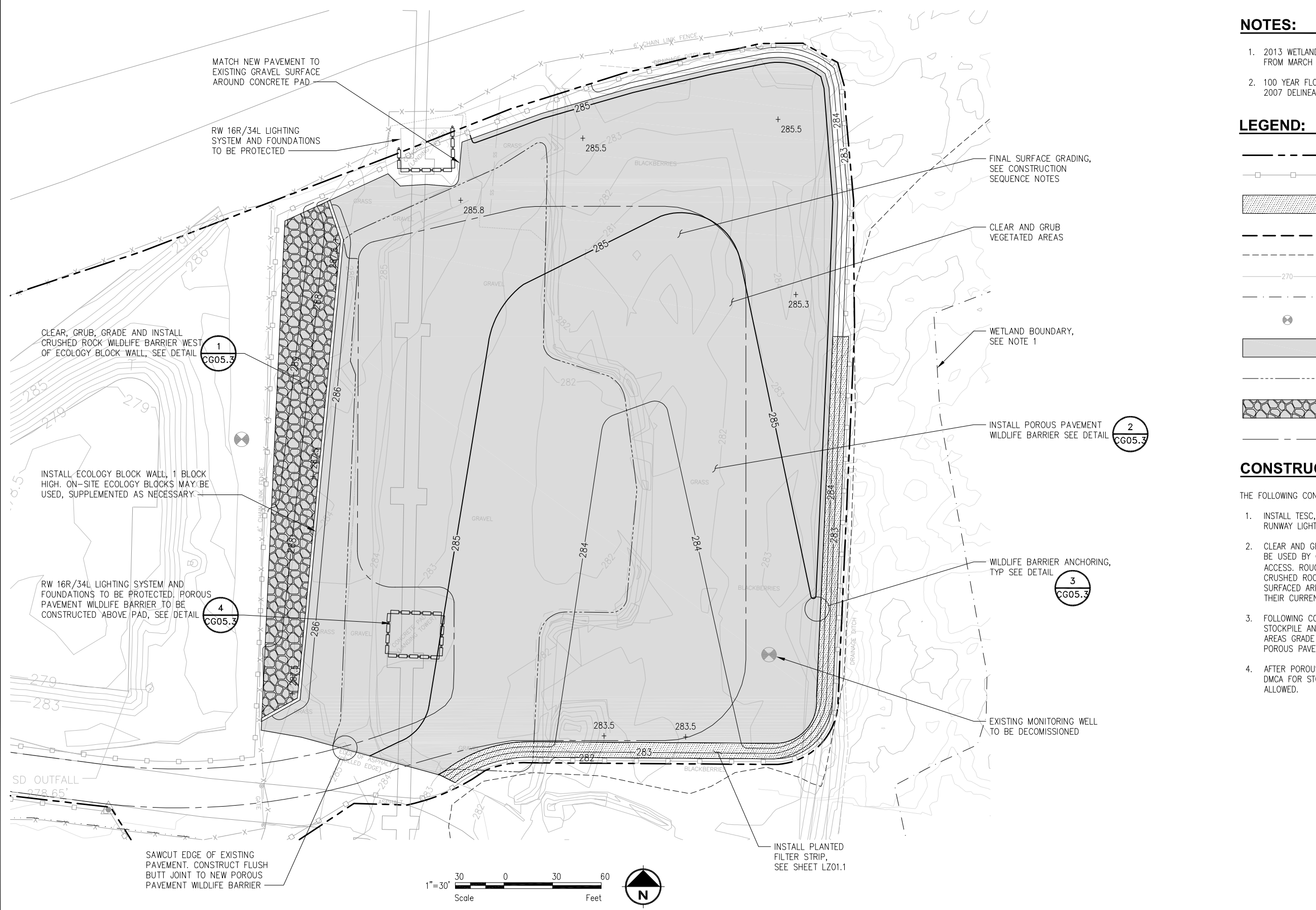


REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME:  
**2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS**  
SHEET TITLE:  
**LLA DEWATERING PLAN**

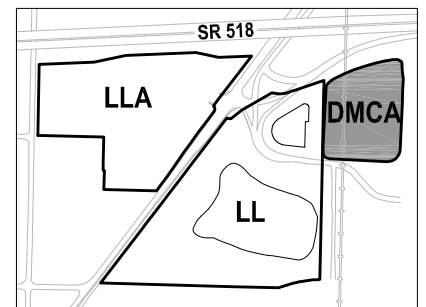
POS WORK PROJECT NUMBER:  
**104396, 104396**  
CONSULTANT'S PROJECT NUMBER:  
**POS-LLA/POS-LL**  
POS PROJECT TRACKING NUMBER:  
**STIA-1701 CG02.1**



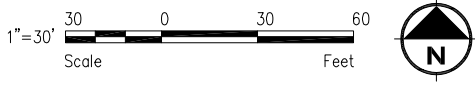
- NOTES:**
- 2013 WETLAND 8 DELINEATION SITE VISIT AND RATING UPDATE FROM MARCH 2016.
  - 100 YEAR FLOOD PLAIN BOUNDARY SHOWN REPRESENTS FEMA 2007 DELINEATION.

- LEGEND:**
- PROJECT WORK AREA LIMITS
  - SILT FENCE
  - PLANTED FILTER STRIP
  - LORA LAKE CLEANUP AREA
  - 100 YEAR FLOOD PLAIN BOUNDARY
  - ELEVATION CONTOUR IN FEET (NAVD 88)
  - WETLAND BOUNDARY
  - EXISTING MONITORING WELL
  - POROUS PAVEMENT WILDLIFE BARRIER
  - LIMITS OF EXISTING GRAVEL SURFACE
  - CRUSHED ROCK WILDLIFE BARRIER
  - CONSTRUCTION ACCESS AND STAGING AREA

- CONSTRUCTION SEQUENCE:**
- THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE USED IN THE DMCA:
- INSTALL TESC, AND DECOMMISSION MONITORING WELL. INSTALL RUNWAY LIGHTING PROTECTION.
  - CLEAR AND GRUB VEGETATED AREAS WITHIN DMCA THAT ARE TO BE USED BY CONTRACTOR FOR SOIL STOCKPILE, STAGING, AND ACCESS. ROUGH GRADE AS DESIRED AND PLACE A 9" THICK CRUSHED ROCK WORKING SURFACE. THE EXISTING GRAVEL SURFACED AREAS CAN BE USED FOR CONTRACTOR STAGING IN THEIR CURRENT CONDITION.
  - FOLLOWING COMPLETION OF USE BY CONTRACTOR FOR SOIL STOCKPILE AND SOIL HANDLING, CLEAR AND GRUB REMAINING AREAS GRADE TO FINAL SUBGRADE ELEVATIONS, AND INSTALL POROUS PAVEMENT WILDLIFE BARRIER AND PLANTED FILTER STRIP.
  - AFTER POROUS PAVEMENT WILDLIFE BARRIER IS INSTALLED, USE OF DMCA FOR STOCKPILING OR HANDLING OF SOILS WILL NOT BE ALLOWED.



**KEY MAP**  
NTS



**FLOYD | SNIDER**  
strategy • science • engineering

**kpff**

PROJECT ENGR./ARCH: KATHRYN SNIDER  
 DESIGNER: KHS  
 DRAWN BY: JKH  
 SCALE: AS SHOWN  
 DATE: 8/29/2016  
 CHECKED BY: USM  
 CHECKED/APPROVED BY: MMK



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
 POS PROJECT ENGINEER:  
 POS DESIGN ENGINEER:  
 POS DRAFTER:  
 POS SCALE:  
 POS DATE:  
 POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT

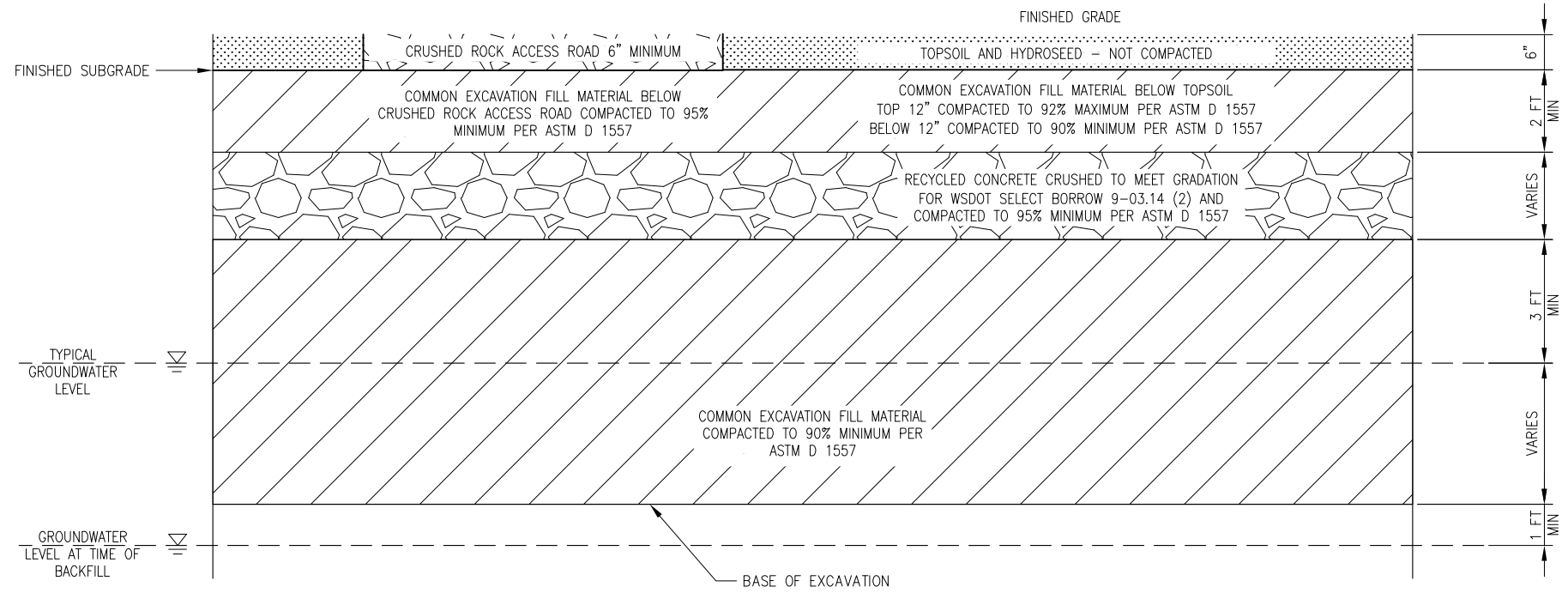
PROJECT NAME: **2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS**

SHEET TITLE: **DMCA GRADING AND SURFACE COMPLETION PLAN**

POS WORK PROJECT NUMBER: **104396, 104396**

CONSULTANT'S PROJECT NUMBER: **POS-LLA/POS-LL**

POS PROJECT TRACKING NUMBER: **STIA-1701 CG03.1**



**TYPICAL BACKFILL SECTION**

LORA LAKE APARTMENTS PARCEL  
SCALE: NTS

**FLOYD | SNIDER**  
strategy • science • engineering



PROJECT ENGR./ARCH: MEGAN KING  
DESIGNER: MMK  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: JSM  
CHECKED/APPROVED BY: MMK



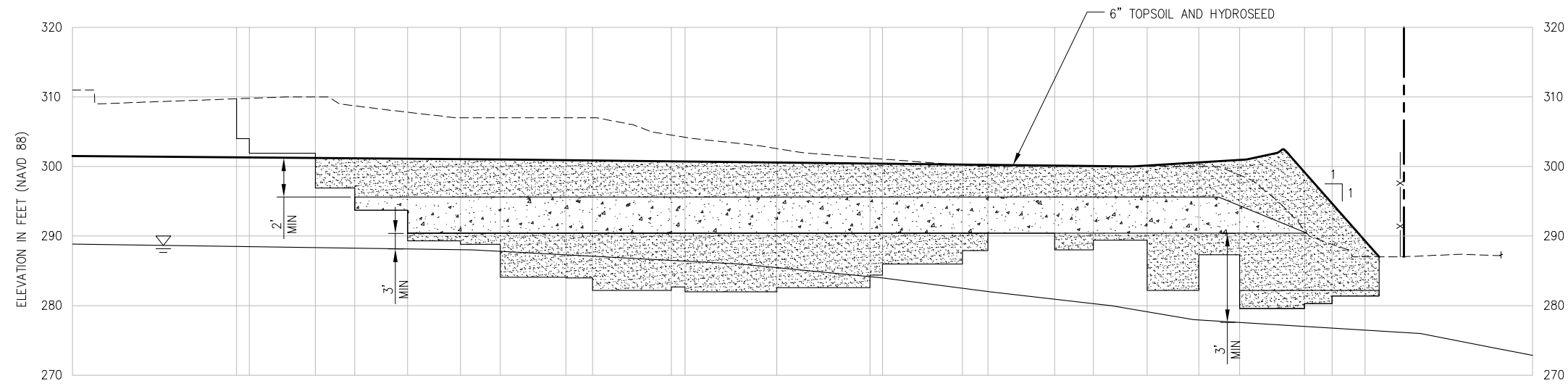
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POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
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POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:



SEA-TAC INTERNATIONAL AIRPORT  
2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS  
SHEET TITLE: LLA TYPICAL BACKFILL SECTION

POS WORK PROJECT NUMBER: 104396, 104396  
CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER: STIA-1701 CG04.1



- LEGEND:**
- EXCAVATION EXTENT
  - APPROXIMATE GROUNDWATER ELEVATION IN FEET (NAVD 88) PRIOR TO DEWATERING
  - COMMON EXCAVATION FILL MATERIAL
  - RECYCLED CRUSHED CONCRETE
  - FINISHED GRADE
  - EXISTING GROUND SURFACE
  - FENCE TO BE INSTALLED
  - PROJECT WORK AREA LIMITS

**SECTION** D  
 LLA BACKFILL SECTION  
 SCALE: H: 1" = 20'  
 V: 1" = 10'

**FLOYD | SNIDER**  
 strategy • science • engineering

PROJECT ENGR./ARCH: MEGAN KING  
 DESIGNER: MMK  
 DRAWN BY: JKH  
 SCALE: AS SHOWN  
 DATE: 8/29/2016  
 CHECKED BY: JSM  
 CHECKED/APPROVED BY: MMK



REVISIONS							
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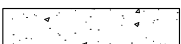


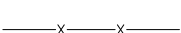
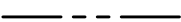
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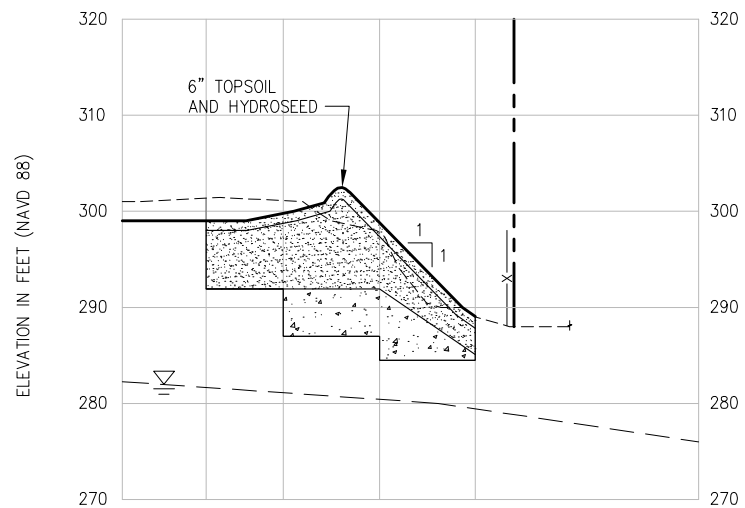
SEA-TAC INTERNATIONAL AIRPORT  
 PROJECT NAME: 2017 LORA LAKE APARTMENTS  
 MTCA REMEDIATION PROJECTS  
 SHEET TITLE: LLA BACKFILL SECTION D

POS WORK PROJECT NUMBER: 104396, 104396  
 CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
 POS PROJECT TRACKING NUMBER: STIA-1701 CG04.2



**LEGEND:**

-  EXCAVATION EXTENT
-  APPROXIMATE GROUNDWATER ELEVATION IN FEET (NAVD 88) PRIOR TO DEWATERING
-  COMMON EXCAVATION FILL MATERIAL
-  RECYCLED CRUSHED CONCRETE
-  FINISHED GRADE
-  EXISTING GROUND SURFACE
-  FENCE - TO BE INSTALLED
-  PROJECT WORK AREA LIMITS



**SECTION**

LLA BACKFILL SECTION  
 SCALE: H: 1" = 20'  
 V: 1" = 10'

H
CG01.1

REVISIONS

NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

**FLOYD | SNIDER**  
 strategy • science • engineering



PROJECT ENGR./ARCH: MEGAN KING  
 DESIGNER: MMK  
 DRAWN BY: JKH  
 SCALE: AS SHOWN  
 DATE: 8/29/2016  
 CHECKED BY: USM  
 CHECKED/APPROVED BY: MMK

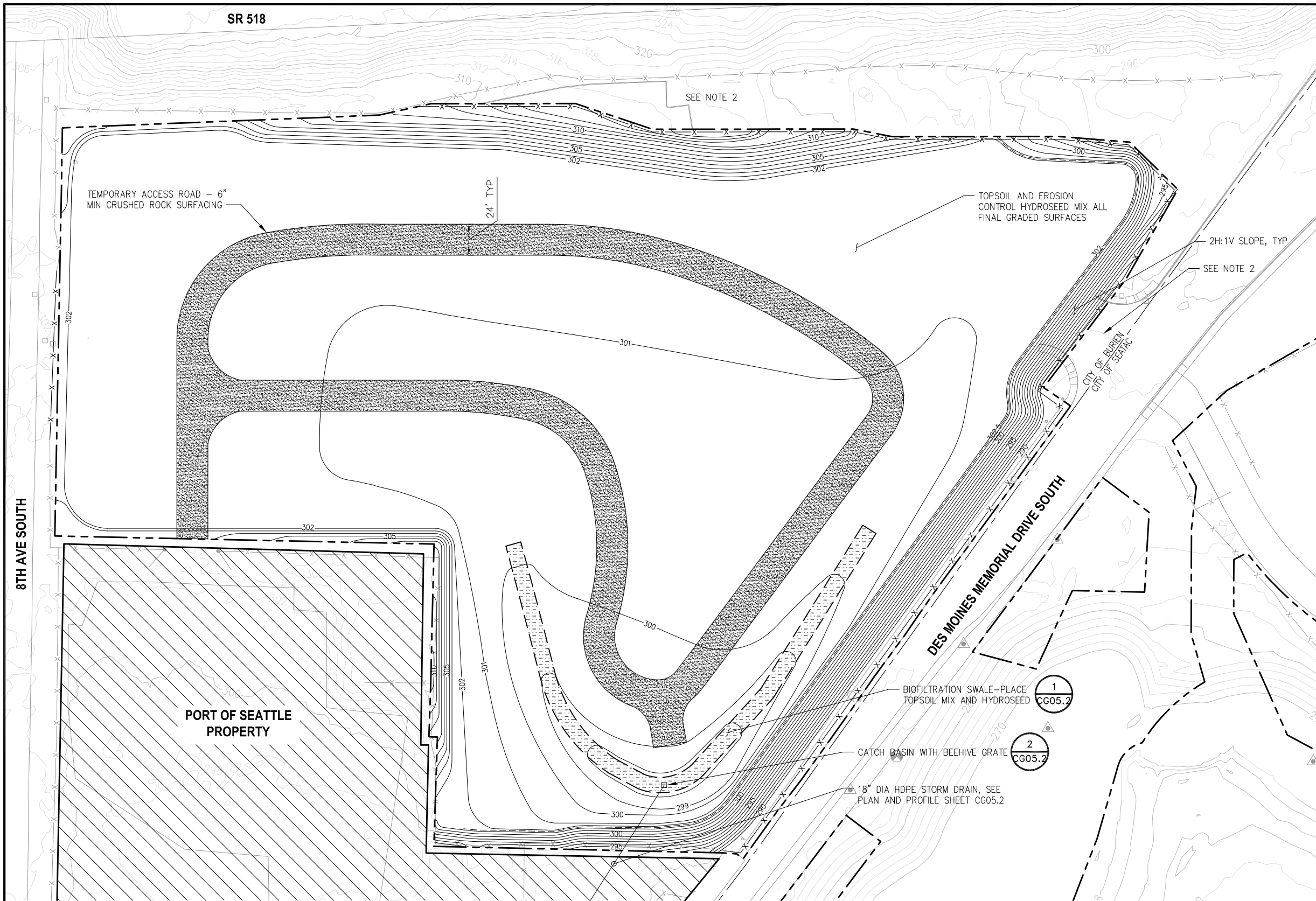


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 POS PROJECT ENGINEER:  
 POS DESIGN ENGINEER:  
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SEA-TAC INTERNATIONAL AIRPORT  
 2017 LORA LAKE APARTMENTS  
 MTCA REMEDIATION PROJECTS  
 SHEET TITLE: LLA BACKFILL SECTION H

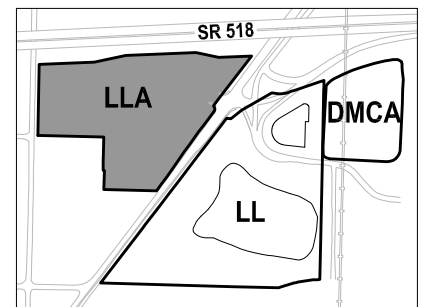
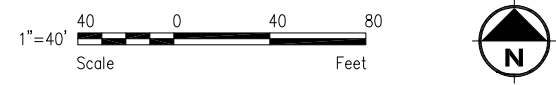
POS WORK PROJECT NUMBER: 104396, 104396  
 CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
 POS PROJECT TRACKING NUMBER: STIA-1701 CG04.3



- NOTES:**
1. SITE GRADING, SURFACE COMPLETION, TEMPORARY ACCESS ROAD, FENCE AND DRAINAGE FEATURES TO REMAIN IN PLACE AT CONTRACT COMPLETION. COMMERCIAL SITE REDEVELOPMENT TO BE COMPLETED BY OTHERS IN THE FUTURE.
  2. COORDINATE WITH AND MATCH TO WORK CONSTRUCTED BY OTHERS FOR SR 518 OFF-RAMP.

- LEGEND:**
- x—x— EXISTING FENCE
  - — — — — PROJECT WORK AREA LIMITS
  - 270— ELEVATION CONTOUR IN FEET (NAVD 88)
  - 310— PROPOSED MAJOR ELEVATION CONTOUR IN FEET (NAVD 88)
  - 302— PROPOSED MINOR ELEVATION CONTOUR IN FEET (NAVD 88)
  - x—x— FENCE TO BE INSTALLED
  - [Stippled Area] TEMPORARY ACCESS ROAD – CRUSHED ROCK SURFACING
  - [Hatched Area] STAGING AREA
  - [Gate Symbol] GATE TO BE INSTALLED
  - [Dashed Line] BIOFILTRATION SWALE

**PLAN**  
LLA GRADING AND SURFACE COMPLETION PLAN  
SCALE: 1" = 40'

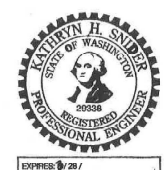


**KEY MAP**  
NTS

**FLOYD | SNIDER**  
strategy • science • engineering

**kpff**

PROJECT ENGR./ARCH: KATHRYN SNIDER  
DESIGNER: KHS  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: USM  
CHECKED/APPROVED BY: MMK

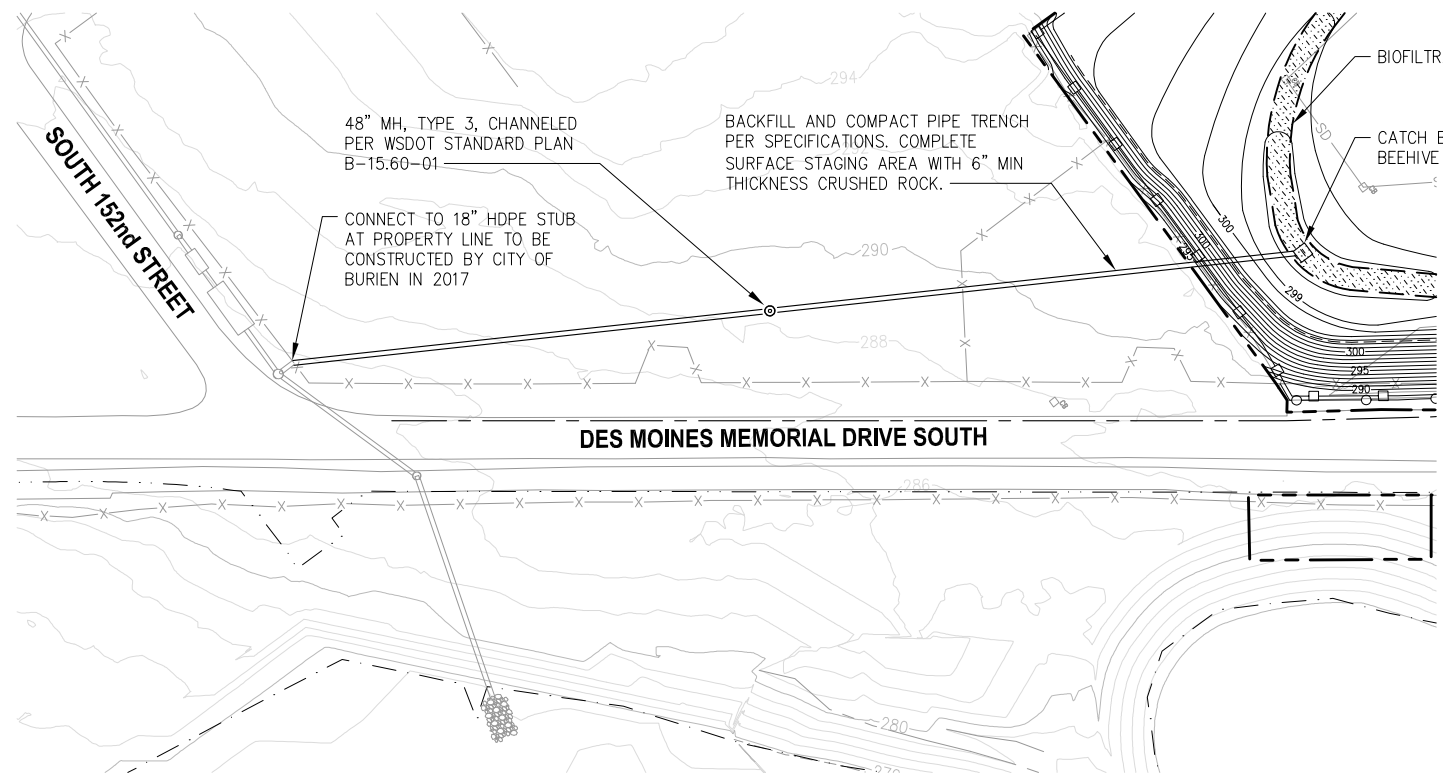


REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
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POS DATE:  
POS CHECKED/APPROVED BY:

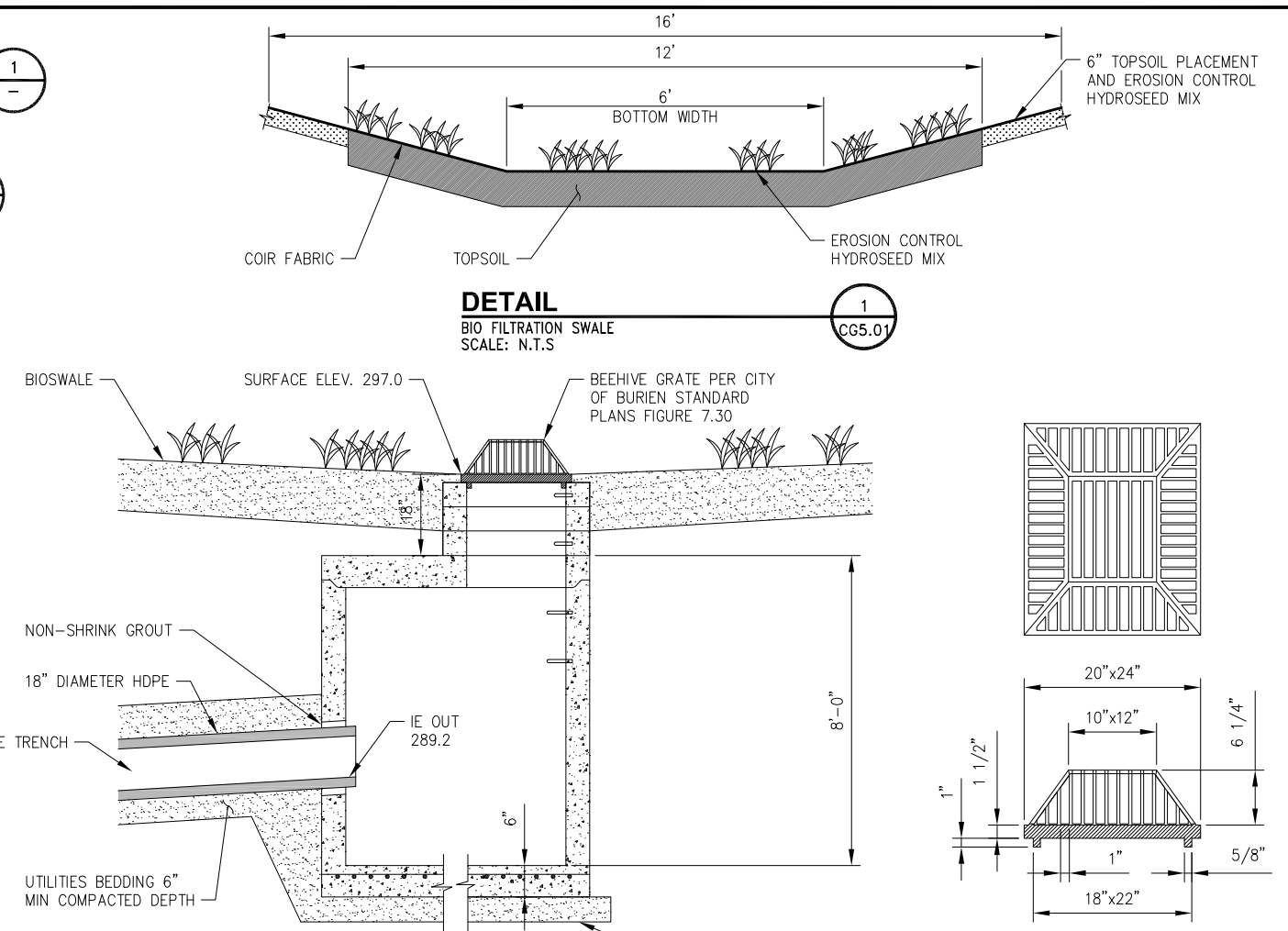
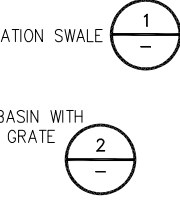
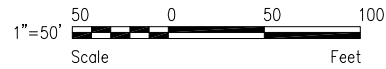
**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME: 2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS  
SHEET TITLE: LLA GRADING AND SURFACE COMPLETION PLAN

POS WORK PROJECT NUMBER: 104396, 104396  
CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER: STIA-1701 CG05.1



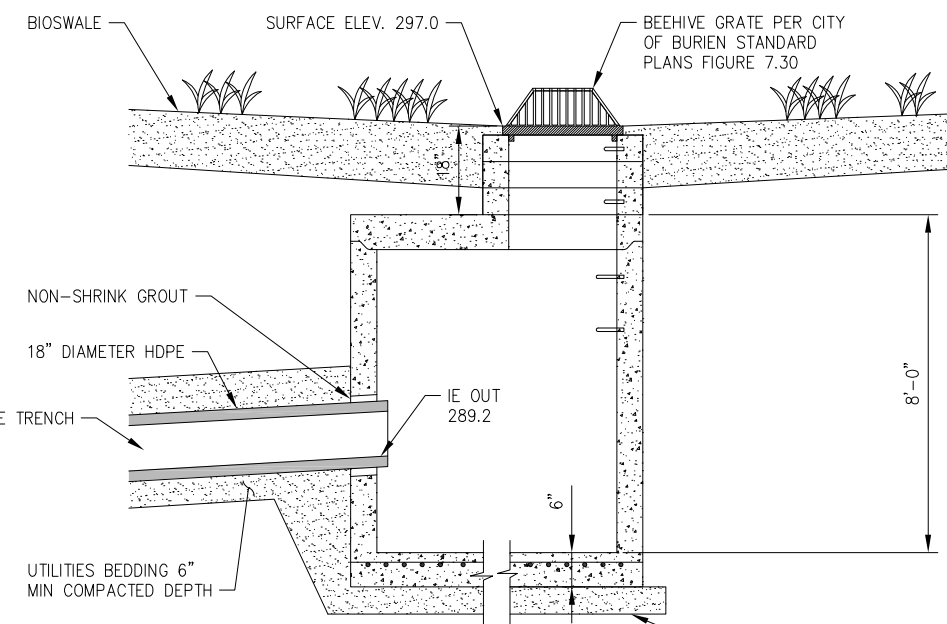
**PLAN**

STORM DRAIN CONNECTION TO S 152nd ST  
SCALE: 1" = 50'



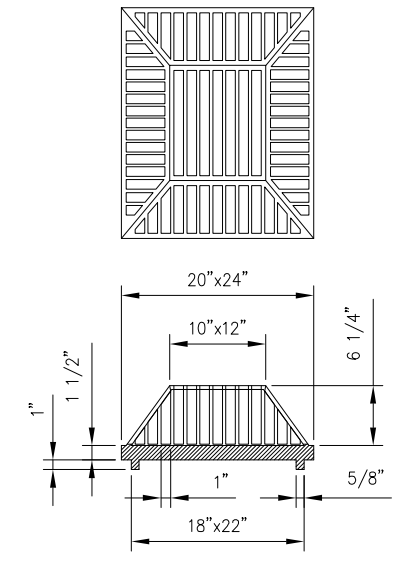
**DETAIL**

BIO FILTRATION SWALE  
SCALE: N.T.S



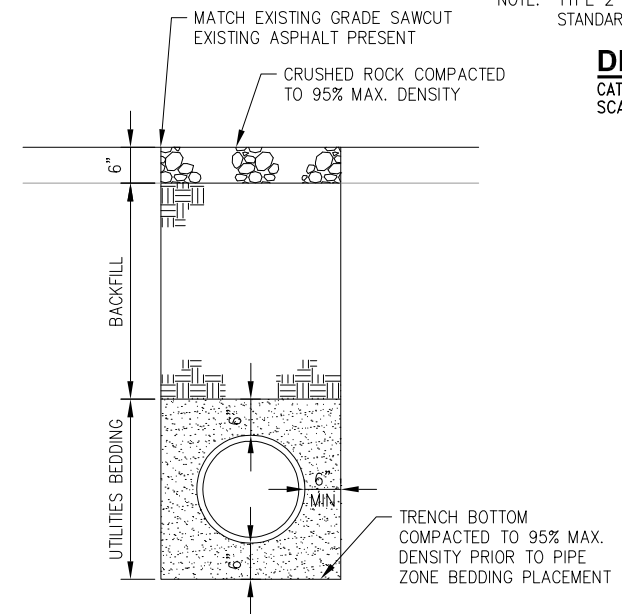
**CATCH BASIN**

NOTE: TYPE 2 CATCH BASIN PER WSDOT  
STANDARD PLAN B-10.20-01



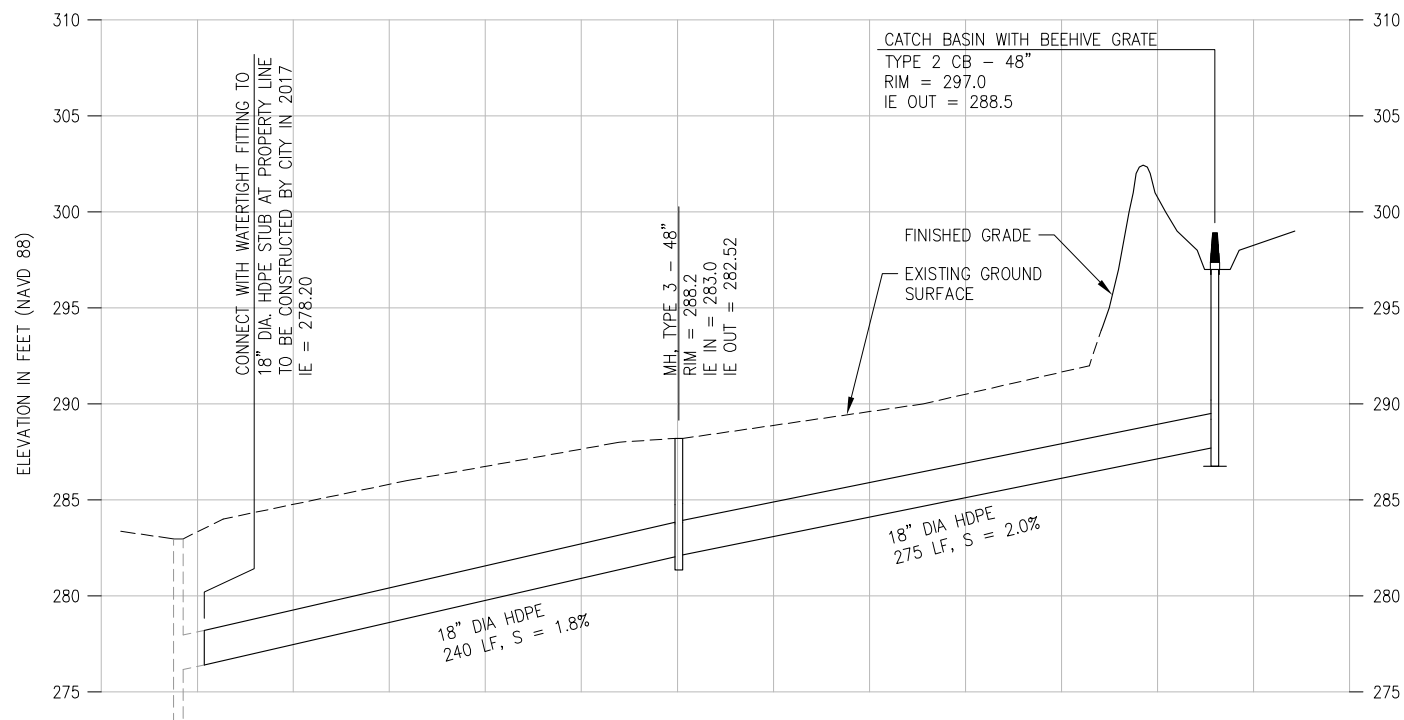
**BEEHIVE GRATE**

NOTE: FOR USE WITH  
SM60 20"x24" FRAME



**DETAIL**

PIPE TRENCH  
SCALE: N.T.S



**PROFILE**

STORM DRAIN CONNECTION TO S 152nd ST  
SCALE: H: 1" = 50'  
SCALE: V: 1" = 5'

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PROJECT ENGR./ARCH: KATHRYN SNIDER  
DESIGNER: KHS  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: USM  
CHECKED/APPROVED BY: MMK

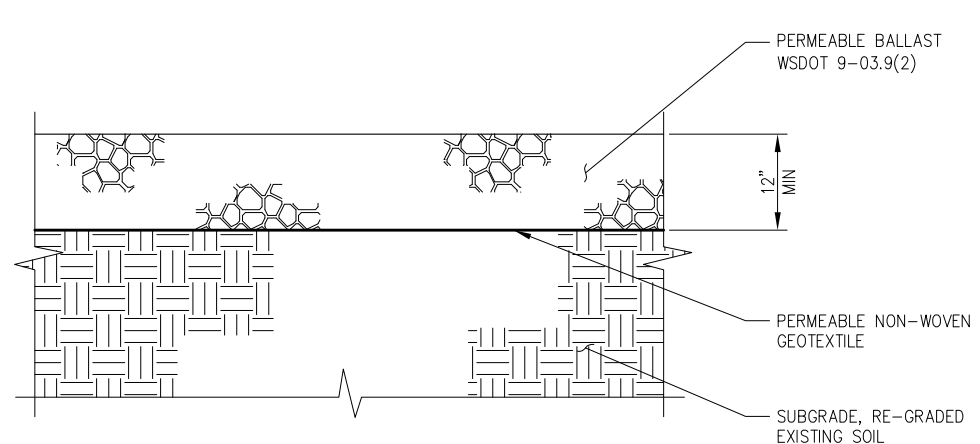


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POS CHECKED/APPROVED BY:

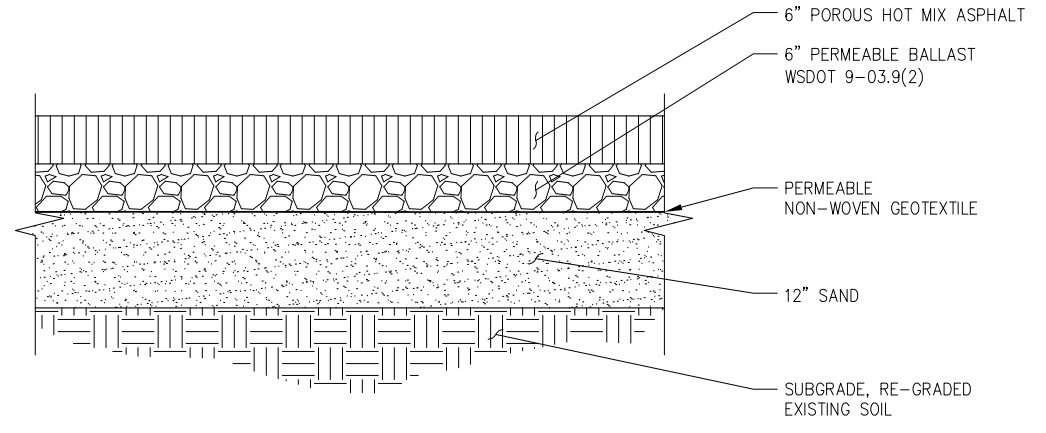
**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME: 2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS  
SHEET TITLE: LLA GRADING AND DRAINAGE DETAILS

POS WORK PROJECT NUMBER: 104396, 104396  
CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER: STIA-1701 CG05.2

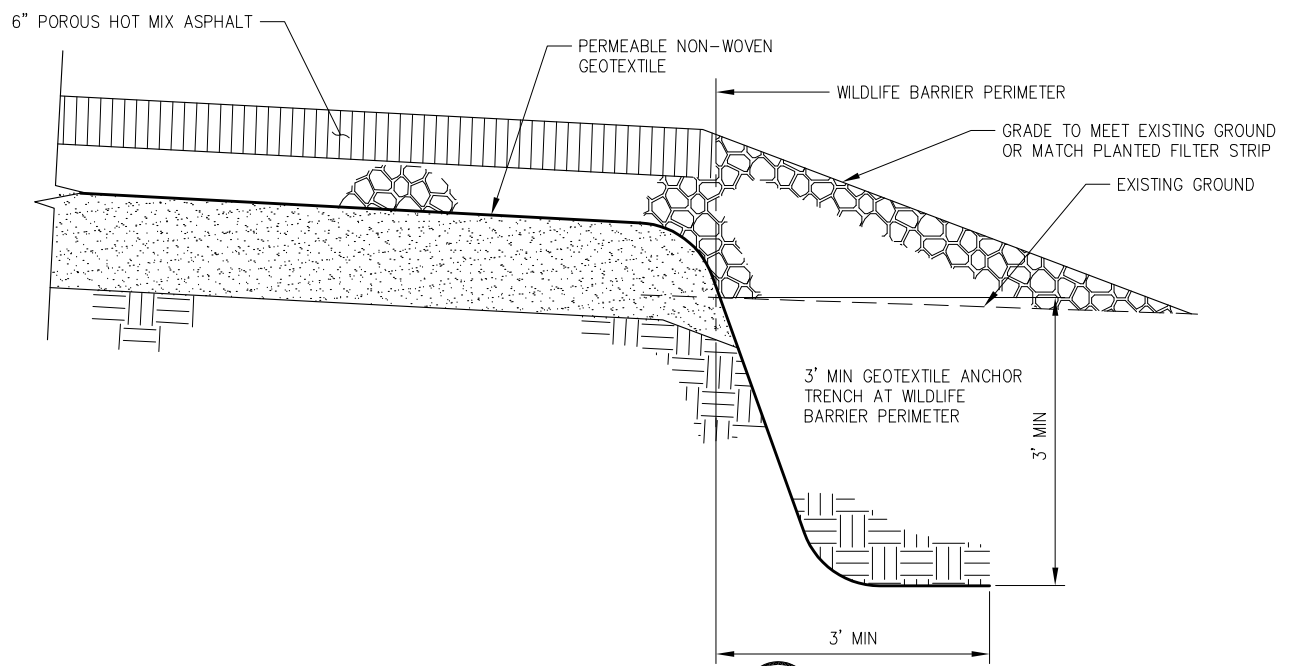


FOR USE IN HILLSIDE AREA WEST OF ECOLOGY BLOCK WALL

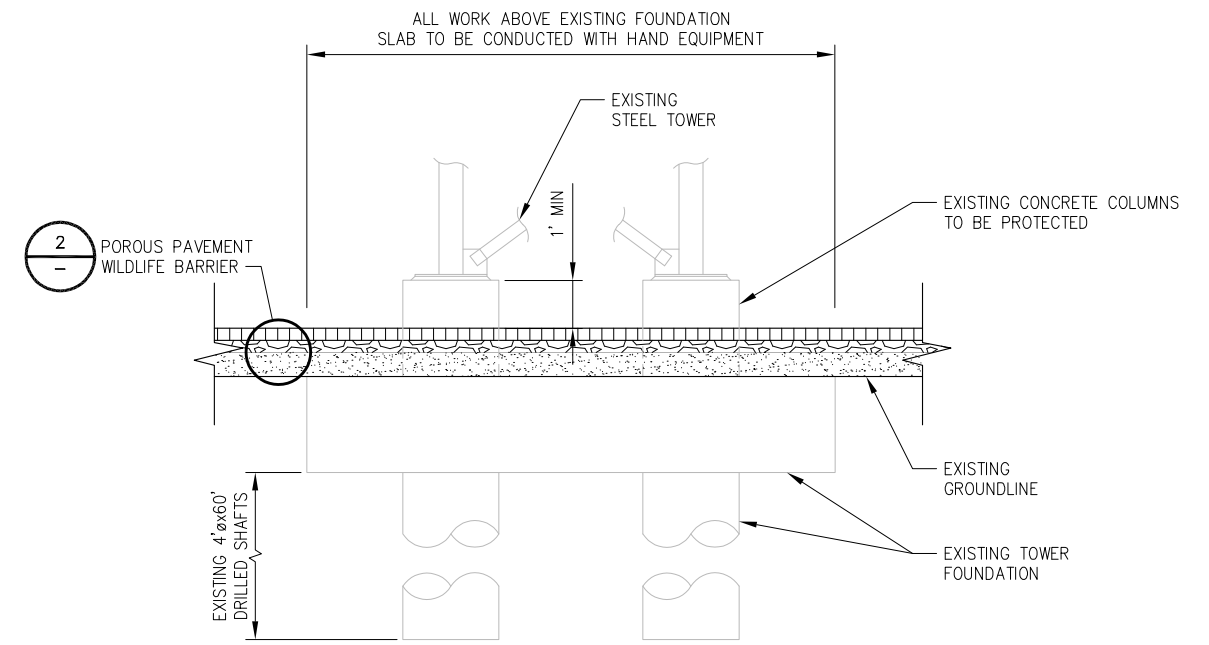
**DETAIL 1**  
DMCA CRUSHED ROCK WILDLIFE BARRIER  
SCALE: NTS  
CG03.1



**DETAIL 2**  
POROUS PAVEMENT WILDLIFE BARRIER  
SCALE: NTS  
CG03.1

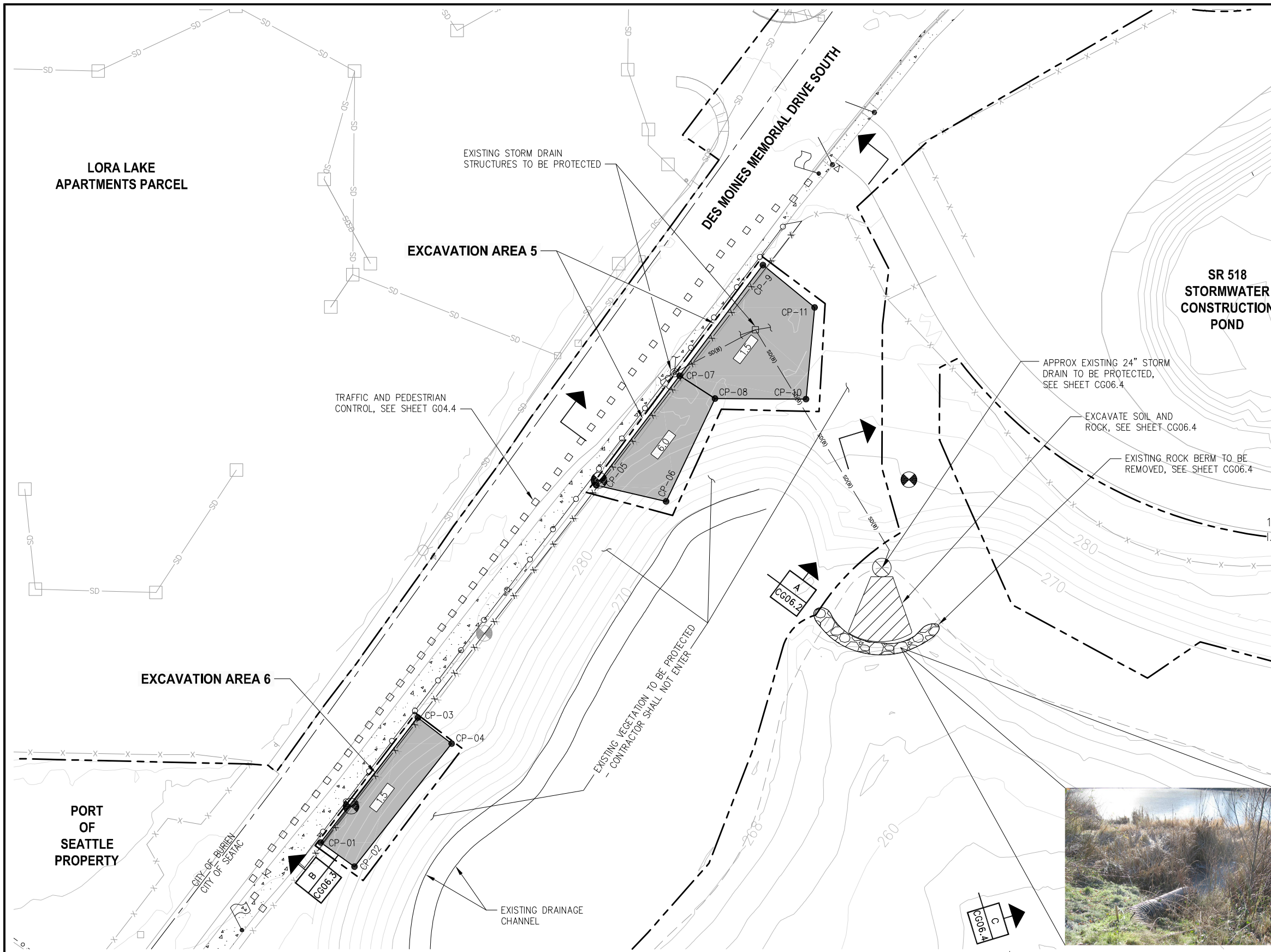


**DETAIL 3**  
DMCA WILDLIFE BARRIER ANCHORING  
SCALE: NTS  
CG03.1



**DETAIL 4**  
POROUS PAVEMENT WILDLIFE BARRIER ABOVE EXISTING LIGHTING SYSTEM FOUNDATION  
SCALE: NTS  
CG03.1

REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D



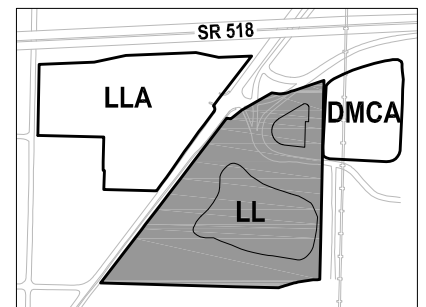
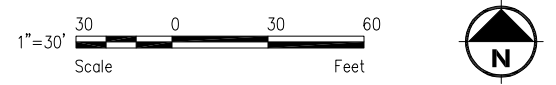
- NOTES:**
1. VEGETATION OUTSIDE OF IDENTIFIED ACCESS AND HAUL ROUTES AND SOIL EXCAVATION AREAS TO BE PROTECTED.
  2. MONITORING WELLS TO BE DECOMMISSIONED PRIOR TO START OF EXCAVATION.
  3. ALL RIGHT OF WAY UTILITIES ASSUMED ACTIVE.

TABLE 1: SOIL EXCAVATION AREAS 5 AND 6 CONTROL POINTS

CONTROL POINT	NORTHING	EASTING
CP-01	174266.90	1272468.00
CP-02	174253.00	1272487.40
CP-03	174338.40	1272523.60
CP-04	174323.50	1272542.90
CP-05	174471.40	1272625.80
CP-06	174462.10	1272665.70
CP-07	174534.10	1272673.50
CP-08	174521.00	1272693.70
CP-09	174597.40	1272721.10
CP-10	174520.70	1272745.80
CP-11	174573.20	1272750.70

- LEGEND:**
- PROJECT WORK AREA LIMITS
  - CONTAMINATED SOIL EXCAVATION AREA
  - EXCAVATION DEPTH BELOW GROUND SURFACE (FEET)
  - ELEVATION CONTOUR IN FEET (NAVD 88)
  - LORA LAKE CLEANUP AREA
  - EXISTING FENCE - TO BE REMOVED AND REPLACED FOLLOWING WORK COMPLETION
  - EXISTING FENCE
  - CONTROL POINT
  - TEMPORARY CONSTRUCTION FENCE
  - EXISTING MONITORING WELLS - TO BE DECOMMISSIONED
  - PAVED SIDEWALK - TO BE PROTECTED

**PLAN**  
LL SEASON 1 EXCAVATION PLAN - AREAS 5 AND 6  
SCALE: 1" = 30'



**KEY MAP**  
NTS

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strategy • science • engineering

**kpff**

PROJECT ENGR./ARCH: JESSI MASSINGALE  
DESIGNER: JSM  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: MMK  
CHECKED/APPROVED BY: JSM



REVISIONS

NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

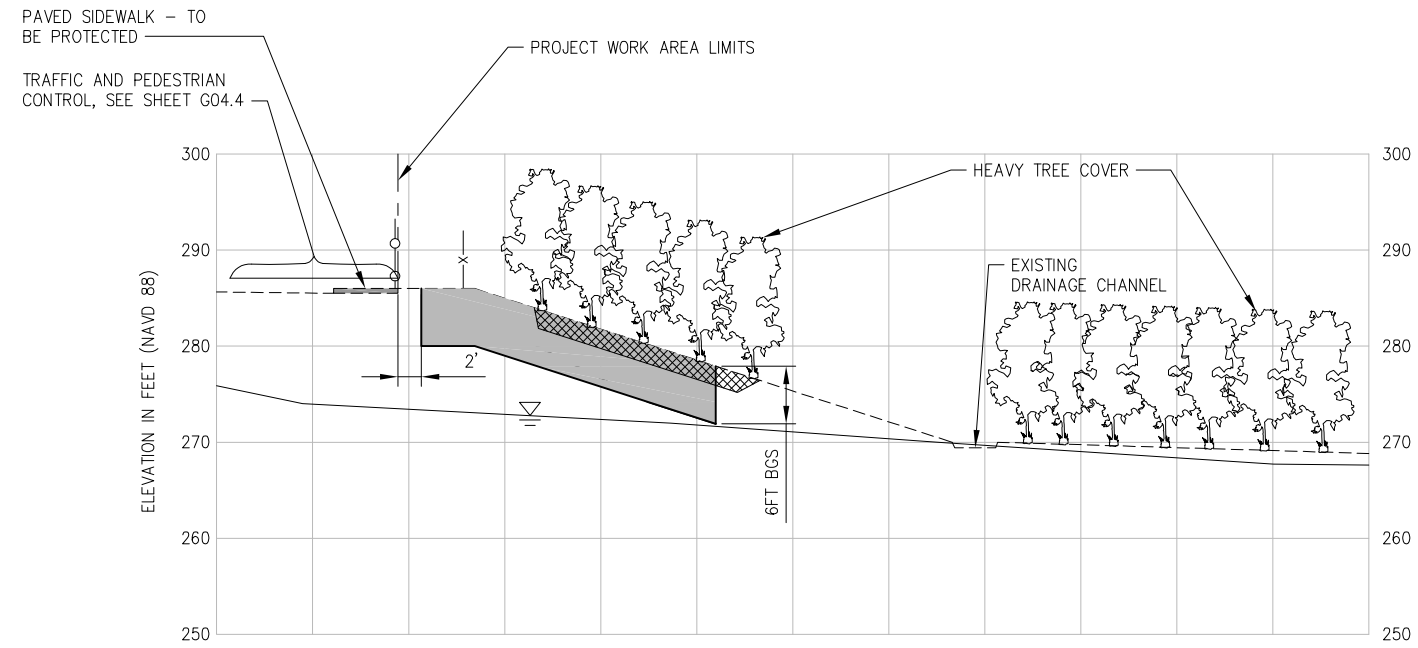
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POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT

PROJECT NAME: 2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS

SHEET TITLE: LL SEASON 1 EXCAVATION PLAN - AREAS 5 AND 6

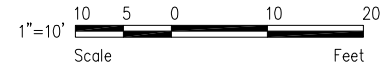
POS WORK PROJECT NUMBER: 104396, 104396  
CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER: STIA-1701 CG06.1



**SECTION**

LL SEASON 1 EXCAVATION SECTION  
 SCALE: H: 1" = 10'  
 SCALE: V: 1" = 10'

A  
 CG06.1



**NOTES:**

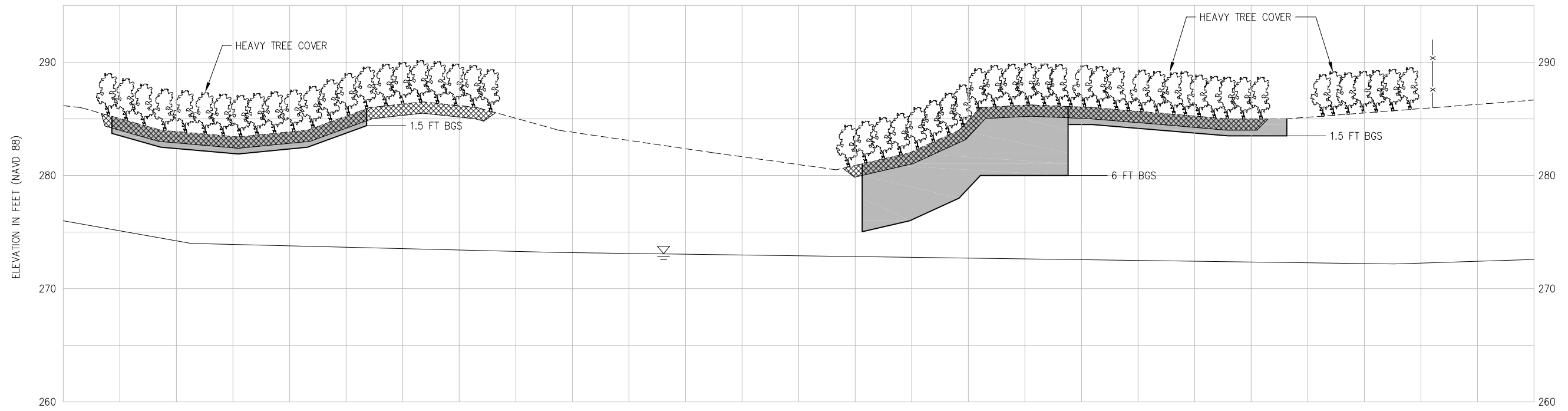
- GROUNDWATER ELEVATIONS VARY SEASONALLY. GROUNDWATER ELEVATION SHOWN IS THE APPROXIMATE DRY SEASON ELEVATION.

**LEGEND:**

- CONTAMINATED SOIL EXCAVATION AREA
- APPROXIMATE GROUNDWATER ELEVATION IN FEET (NAVD 88)
- EXISTING FENCE - TO BE REMOVED AND REPLACED
- TEMPORARY CONSTRUCTION FENCE - TO BE INSTALLED DURING CONSTRUCTION
- TREE ROOTS
- EXISTING GROUND SURFACE

REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D





**SECTION** B  
 LL SEASON 1 EXCAVATION SECTION CG06.1  
 SCALE: H: 1" = 20'  
 SCALE: V: 1" = 5'

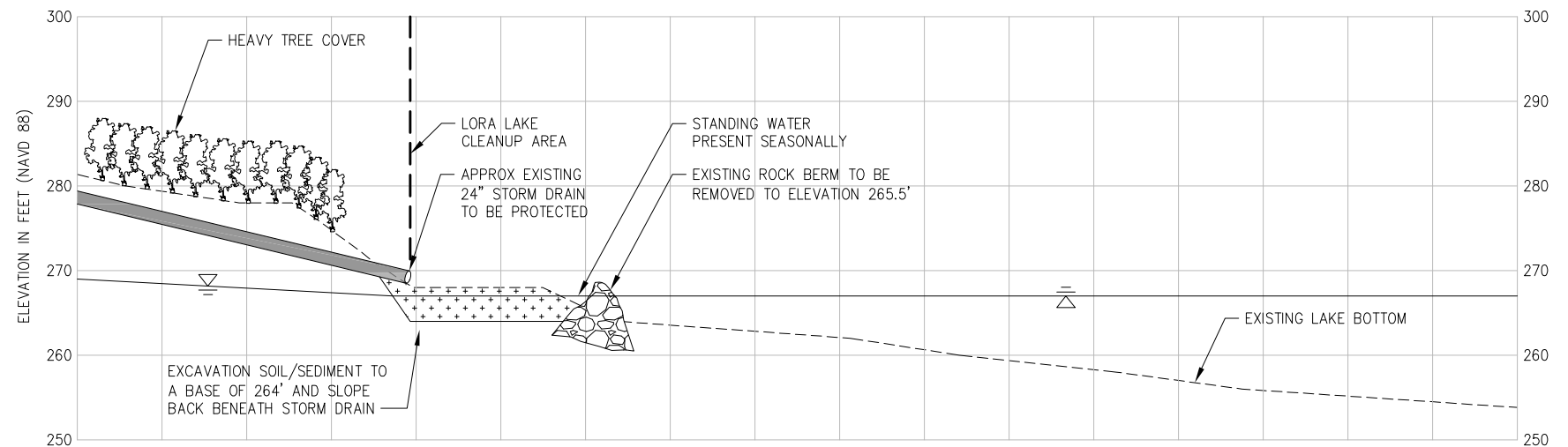
**NOTES:**

- GROUNDWATER ELEVATIONS VARY SEASONALLY. GROUNDWATER ELEVATION SHOWN IS THE APPROXIMATE DRY SEASON ELEVATION.

**LEGEND:**

- CONTAMINATED SOIL EXCAVATION AREA
- ▽ APPROXIMATE GROUNDWATER ELEVATION IN FEET (NAVD 88)
- xxx EXISTING FENCE - TO BE REMOVED AND REPLACED
- TREE ROOTS
- EXISTING GROUND SURFACE

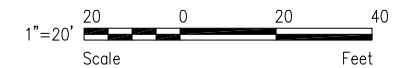
REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D



**SECTION**

LL EXCAVATION SECTION  
 SCALE: H: 1" = 20'  
 SCALE: V: 1" = 10'

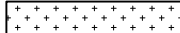
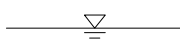
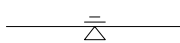
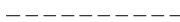
C
CG06.1



**NOTES:**

1. GROUNDWATER ELEVATIONS VARY SEASONALLY. GROUNDWATER ELEVATION SHOWN IS THE APPROXIMATE DRY SEASON ELEVATION.

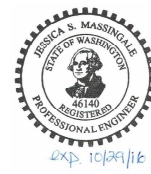
**LEGEND:**

-  SOIL/SEDIMENT EXCAVATION EXTENT
-  APPROXIMATE GROUNDWATER ELEVATION IN FEET (NAVD 88)
-  APPROXIMATE SURFACE WATER ELEVATION IN FEET (NAVD 88) BEFORE FILL
-  EXISTING GROUND SURFACE

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PROJECT ENGR./ARCH:  
 JESSI MASSINGALE  
 DESIGNER:  
 JSM  
 DRAWN BY:  
 JKH  
 SCALE:  
 AS SHOWN  
 DATE:  
 8/29/2016  
 CHECKED BY:  
 MMK  
 CHECKED/APPROVED BY:  
 JSM



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 POS DESIGN ENGINEER:  
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 POS SCALE:  
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 POS CHECKED/APPROVED BY:

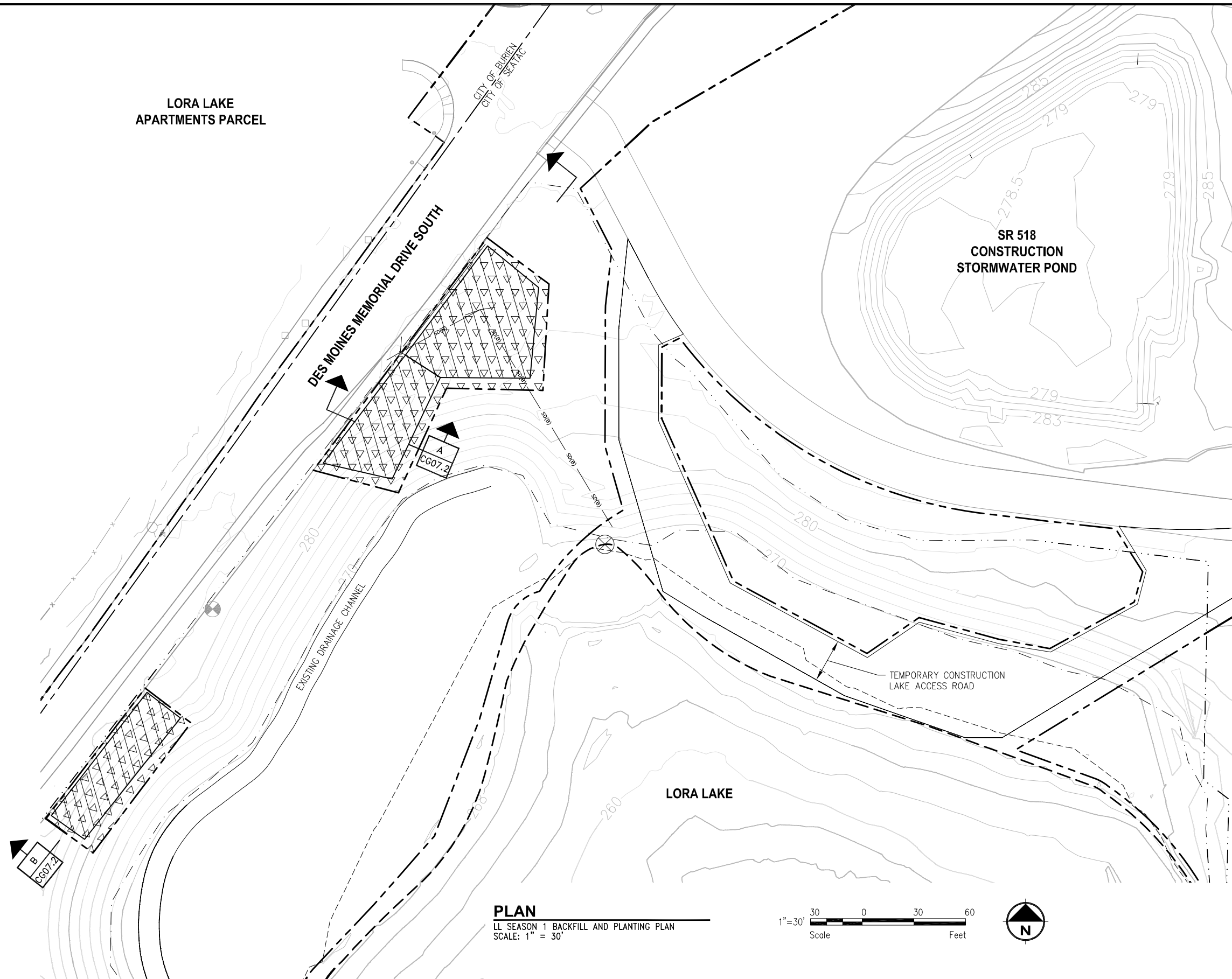


SEA-TAC INTERNATIONAL AIRPORT  
 2017 LORA LAKE APARTMENTS  
 MTCA REMEDIATION PROJECTS  
 SHEET TITLE: LL SEASON 1 EXCAVATION SECTION C

POS WORK PROJECT NUMBER  
 104396, 104396  
 CONSULTANT'S PROJECT NUMBER  
 POS-LLA/POS-LL  
 POS PROJECT TRACKING NUMBER  
 STIA-1701 CG06.4



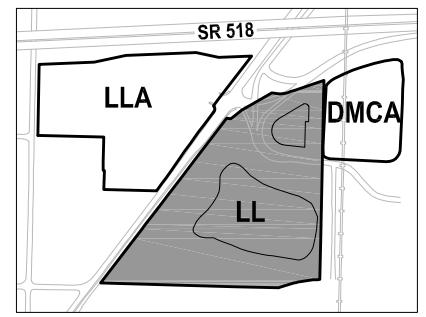
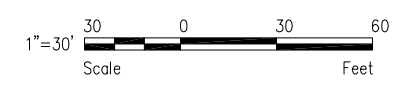
LORA LAKE APARTMENTS PARCEL



- NOTES:**
- SOIL EXCAVATION AREAS WILL BE BACKFILLED AND REPLANTED AT THE END OF SEASON 1. SEE SHEET CG07.2 FOR BACKFILL DETAILS AND SHEET LZ01.1 FOR PLANTING SCHEDULE AND DETAILS.
  - THE TEMPORARY CONSTRUCTION LAKE ACCESS ROAD AND LORA LAKE WILL BE REPLANTED AT THE END OF SEASON 2. SEE SHEET LP01.1 FOR PLANTING EXTENTS AND SHEET LZ01.1 FOR PLANTING SCHEDULE AND DETAILS.

- LEGEND:**
- PROJECT WORK AREA LIMITS
  - UPLAND BUFFER ZONE
  - SOIL EXCAVATION AREAS - TO BE BACKFILLED AND REPLANTED
  - LORA LAKE CLEANUP AREA
  - ELEVATION CONTOUR IN FEET (NAVD 88)
  - RESTRICTIVE COVENANT BOUNDARY
  - WETLAND BOUNDARY

**PLAN**  
LL SEASON 1 BACKFILL AND PLANTING PLAN  
SCALE: 1" = 30'



**KEY MAP**  
NTS

**FLOYD | SNIDER**  
strategy • science • engineering

**kpff**

PROJECT ENGR./ARCH: JESSI MASSINGALE  
DESIGNER: JSM  
DRAWN BY: JKH  
SCALE: AS SHOWN  
DATE: 8/29/2016  
CHECKED BY: MMK  
CHECKED/APPROVED BY: JSM



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POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
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POS SCALE:  
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**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT

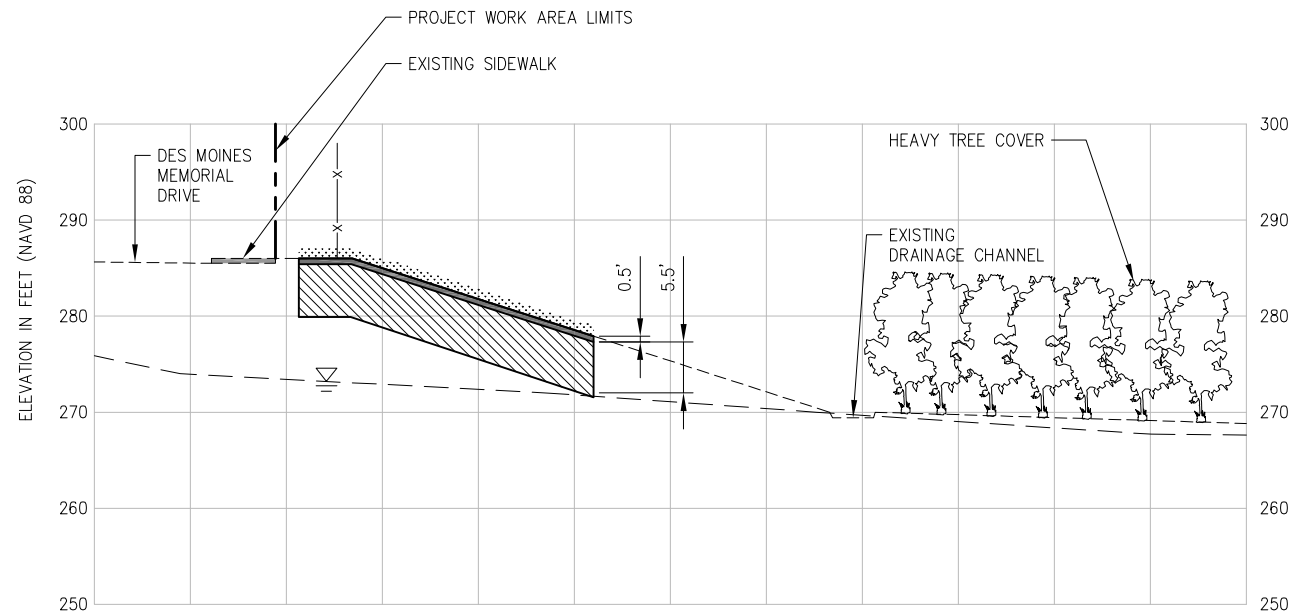
PROJECT NAME: **2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS**

SHEET TITLE: **LL SEASON 1 BACKFILL AND PLANTING PLAN**

POS WORK PROJECT NUMBER: **104396, 104396**

CONSULTANT'S PROJECT NUMBER: **POS-LLA/POS-LL**

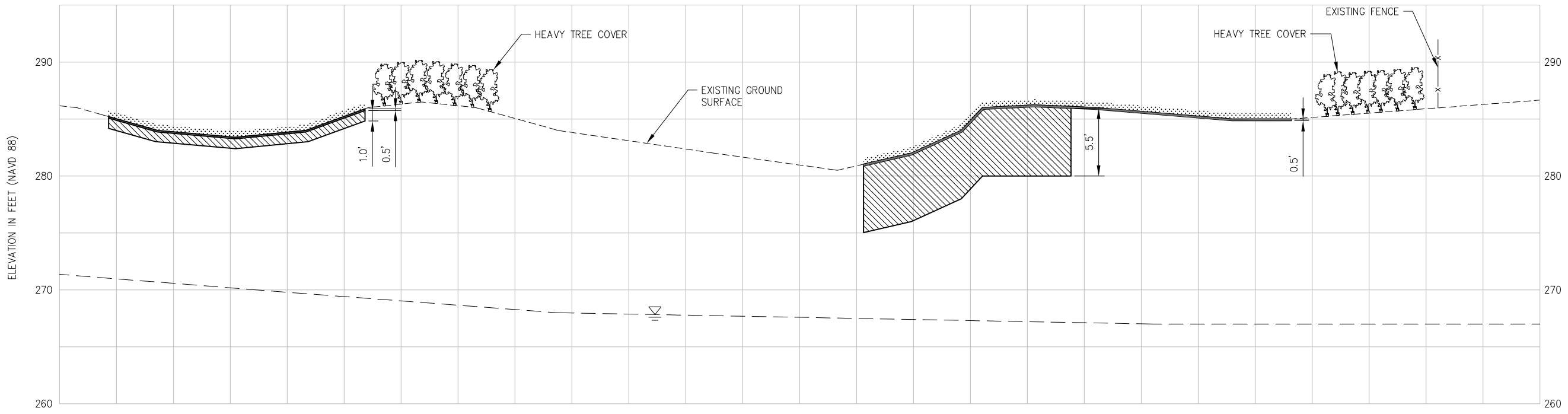
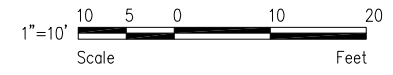
POS PROJECT TRACKING NUMBER: **STIA-1701 CG07.1**



- LEGEND:**
- PRE-DEWATERING APPROXIMATE GROUNDWATER ELEVATION IN FEET (NAVD 88)
  - TOPSOIL
  - IMPORTED COMMON BORROW
  - UPLAND BUFFER ZONE.
  - FENCE - TO BE INSTALLED
  - EXISTING GROUND SURFACE

- NOTES:**
- SEE SHEET LZ01.1 FOR UPLAND BUFFER ZONE PLANTING SCHEDULE AND DETAILS.

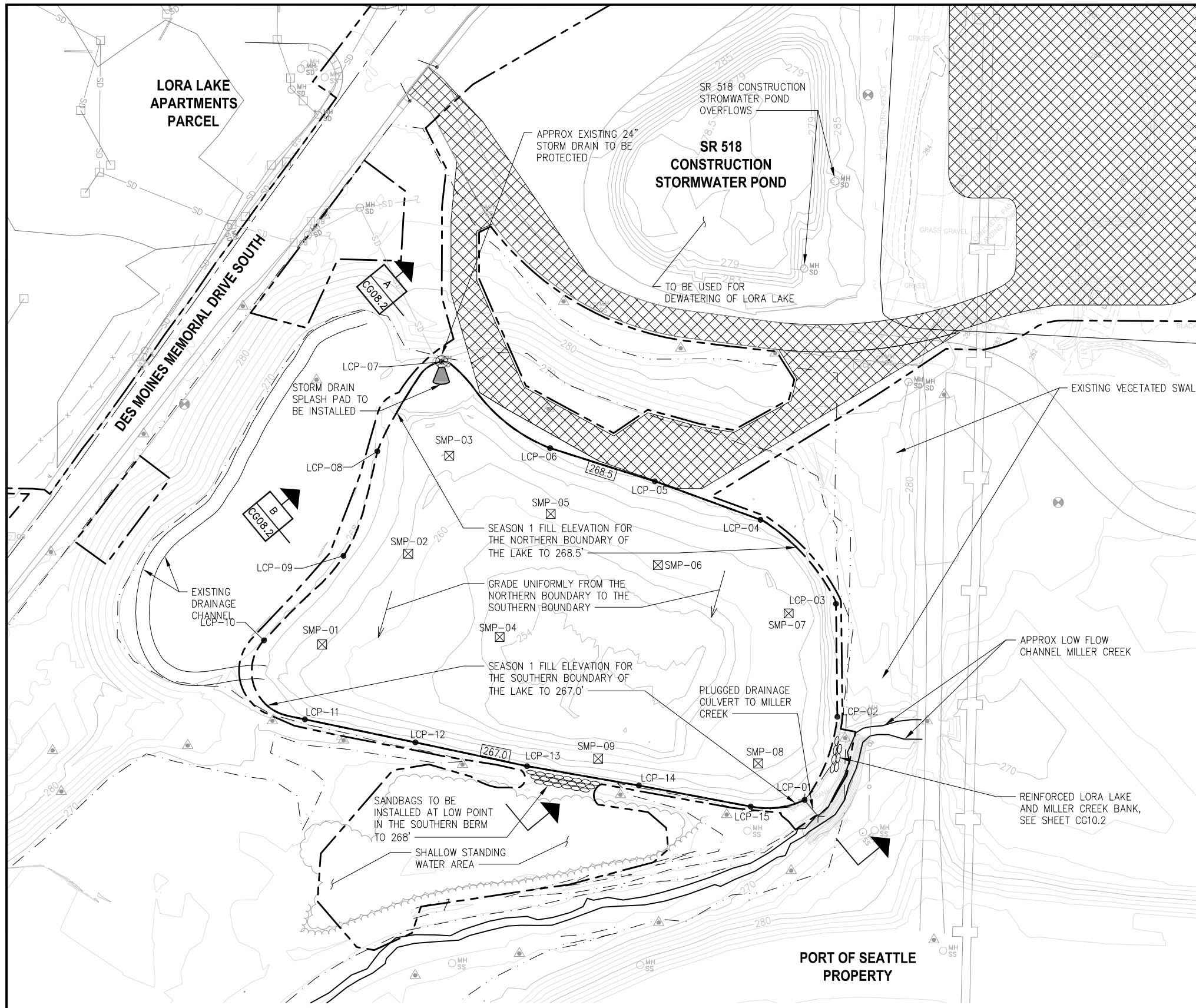
**SECTION A**  
 LL SEASON 1 BACKFILL AND PLANTING SECTION  
 SCALE: H: 1" = 10'  
 SCALE: V: 1" = 10'  
 CG07.1



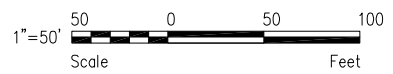
**SECTION B**  
 LL SEASON 1 BACKFILL AND PLANTING SECTION  
 SCALE: H: 1" = 20'  
 SCALE: V: 1" = 5'  
 CG07.1



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**PLAN**  
LL DEWATERING, SEDIMENT CAP, AND FILL PLAN  
SCALE: 1" = 50'



**NOTES:**

1. CONTRACTOR MAY OPEN CUT THE ACCESS ROAD IN THIS AREA TO INSTALL DISCHARGE PIPING FOR PUMPING FROM LORA LAKE TO SR 518 CONSTRUCTION STORMWATER POND. REMOVE PIPE AFTER CONSTRUCTION AND RESTORE TO ORIGINAL OR BETTER CONDITION. SUBMIT INSTALLATION DRAWING AND CONSTRUCTION PLAN AT LEAST 30 DAYS PRIOR TO CUTTING ROAD.
2. SEE SHEET CG09.1 FOR SEASON 2 FILL ELEVATIONS.
3. INSTALL SUMP TO BE USED FOR DEWATERING DURING CONSTRUCTION. PREVENT LAKE WATER FROM ENTERING MILLER CREEK DURING LAKE CAPPING, FILLING, AND RAIN EVENTS.
4. PERFORM WEED REMOVAL ACTIVITIES WITHIN SHALLOW STANDING WATER AREA DURING SEASON 1.
5. ALL LAKE DEWATERING WATER WILL BE CHEMICALLY TREATED AND THEN DISCHARGED TO THE SR 518 CONSTRUCTION STORMWATER POND FOR INFILTRATION.

**LEGEND:**

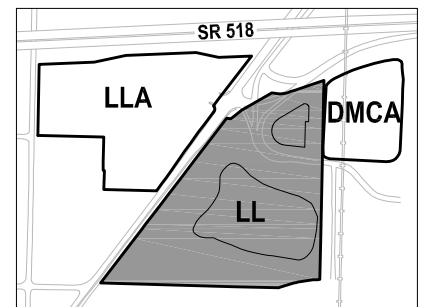
- PROJECT WORK AREA LIMITS
- ▨ CONSTRUCTION ACCESS AND STAGING AREA
- LORA LAKE CLEANUP AREA
- ELEVATION CONTOUR IN FEET (NAVD 88)
- RESTRICTIVE COVENANT BOUNDARY
- WETLAND BOUNDARY
- ☒ SETTLEMENT MONITORING POINT
- LCP-XX CAP AND FILL CONTROL POINT

**TABLE 1: CAP AND FILL CONTROL POINTS**

CONTROL POINT	NORTHING	EASTING	EXISTING ELEVATION
LCP-01	174541.33	1272845.26	266.92
LCP-02	174110.10	1273139.13	267.60
LCP-03	174210.05	1273137.89	267.39
LCP-04	174284.37	1273071.19	268.10
LCP-05	174318.45	1272977.70	268.10
LCP-06	174347.73	1272885.09	267.25
LCP-07	174424.23	1272789.21	267.89
LCP-08	174344.94	1272732.23	267.47
LCP-09	174252.58	1272702.49	268.00
LCP-10	174177.71	1272632.00	267.47
LCP-11	174107.83	1272668.20	267.54
LCP-12	174087.48	1272765.94	267.49
LCP-13	174066.43	1272864.66	267.00
LCP-14	174049.33	1272963.59	267.47
LCP-15	174030.70	1273062.44	267.30

**TABLE 2: FILL SETTLEMENT MONITORING POINTS**

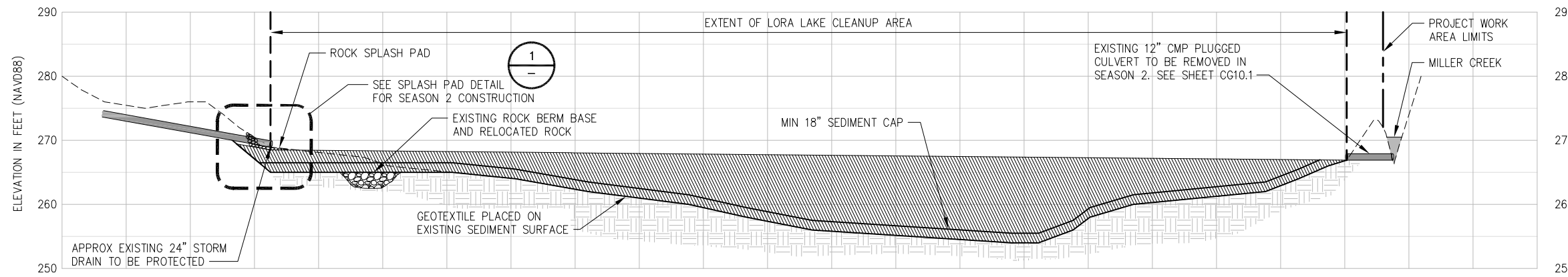
SETTLEMENT MONITORING POINT	NORTHING	EASTING
SMP-01	174174.11	1272683.46
SMP-02	174254.36	1272759.60
SMP-03	174340.94	1272795.97
SMP-04	174180.71	1272840.47
SMP-05	174289.60	1272885.52
SMP-06	174244.40	1272980.38
SMP-07	174201.54	1273096.02
SMP-08	174068.80	1273069.13
SMP-09	174073.11	1272927.60



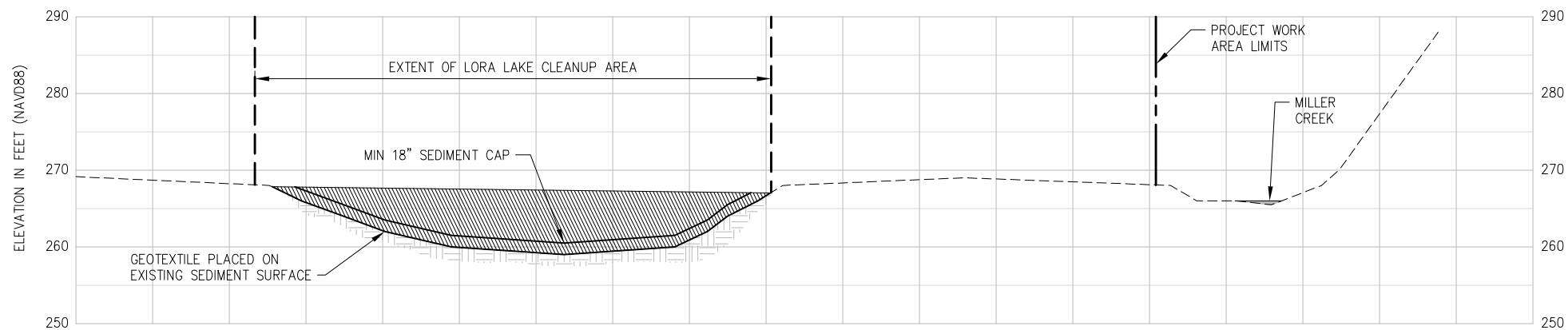
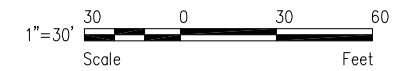
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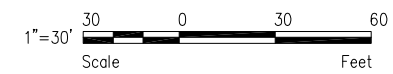




**SECTION** A  
LL SEDIMENT CAPPING SECTION  
SCALE: H: 1" = 30'  
SCALE: V: 1" = 10'



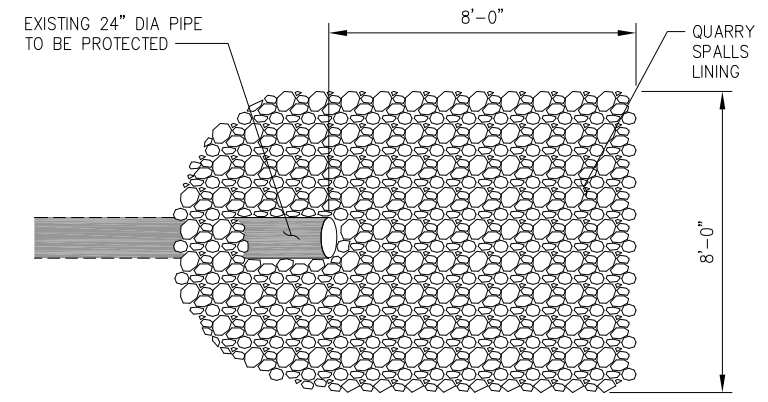
**SECTION** B  
LL SEDIMENT CAPPING SECTION  
SCALE: H: 1" = 30'  
SCALE: V: 1" = 10'



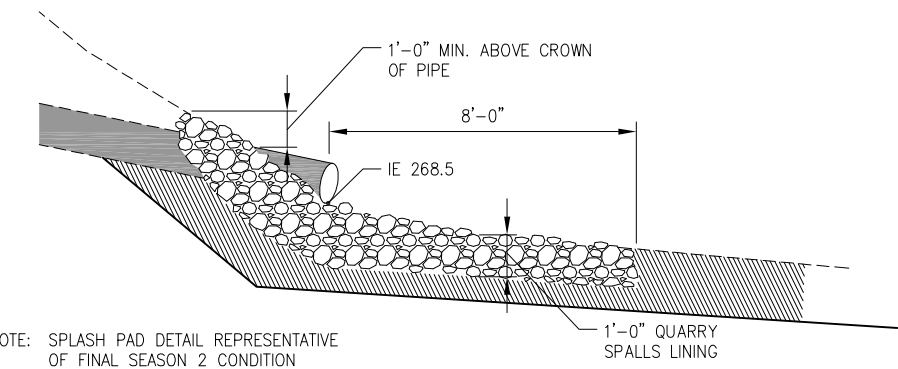
**LEGEND:**

- EXISTING GROUND SURFACE
- SEDIMENT CAP AND LAKE FILL SAND (CARBON-AMENDED)
- CONTAMINATED SEDIMENT
- GEOTEXTILE
- QUARRY SPALLS

NOTE: LL SEDIMENT CAPPING SECTIONS A+B REPRESENTATIVE OF FINAL SEASON 1 FILL ELEVATIONS. SEASON 2 FILL ELEVATION IS SHOWN ON SHEET CG04.1. SEASON 2 WETLAND TOPSOIL AND PLANTING SHOWN ON CG10.1 AND LD01.1.



**PLAN**



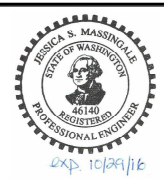
**SECTION**

NOTE: SPLASH PAD DETAIL REPRESENTATIVE OF FINAL SEASON 2 CONDITION

**DETAIL**  
SPLASH PAD DETAIL  
SCALE: NTS

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**kpff**

PROJECT ENGR./ARCH:  
JESSI MASSINGALE  
DESIGNER:  
JSM  
DRAWN BY:  
JKH  
SCALE:  
AS SHOWN  
DATE:  
8/29/2016  
CHECKED BY:  
MMK  
CHECKED/APPROVED BY:  
JSM

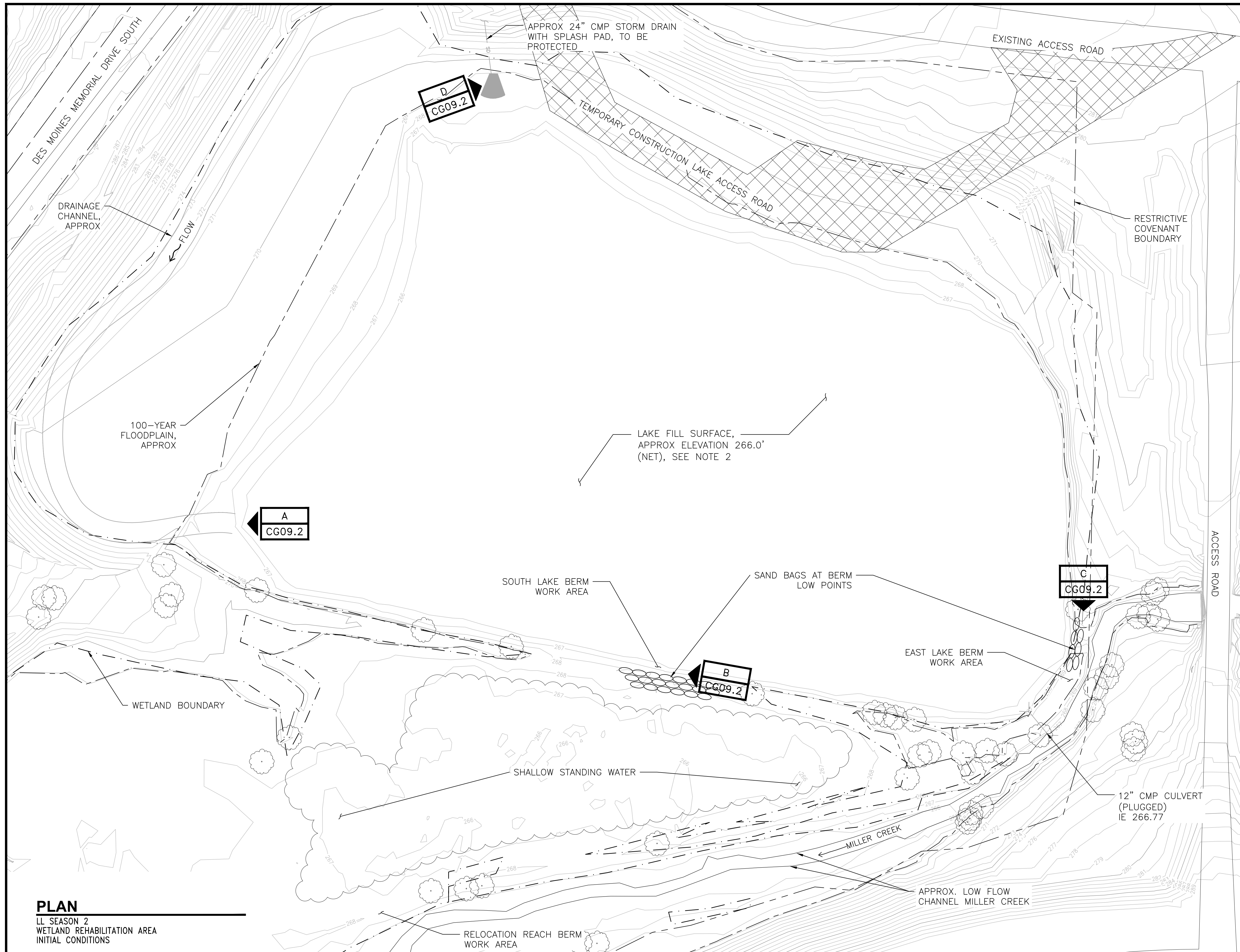


REVISIONS									
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POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
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POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME:  
**2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS**  
SHEET TITLE:  
**LL SEDIMENT CAP AND FILL SECTIONS**

POS WORK PROJECT NUMBER  
**104396, 104396**  
CONSULTANT'S PROJECT NUMBER  
**POS-LLA/POS-LL**  
POS PROJECT TRACKING NUMBER  
**STIA-1701 CG08.2**



**NOTES:**

1. SEE SHEET V01.1 FOR SITE SURVEY CONTROL.
2. SEASON 2 INITIAL CONDITIONS WILL BE POST SEASON 1 SEDIMENT CAP AND FILL IN THE LORA LAKE REGION (APPROX EL 266 NAVD 88 AFTER SETTLEMENT). SEE SHEETS CG08.1 AND CU03.1. THE SEASON 2 INITIAL FILL SURFACE WILL BE GENERALLY FLAT.

**LEGEND:**

- CREEK
- RESTRICTIVE COVENANT BOUNDARY
- WETLAND BOUNDARY
- 100 YEAR FLOODPLAIN
- ACCESS ROAD
- ELEVATION CONTOUR IN FEET (NAVD 88)
- CULVERT
- TREES, BRUSH
- SAND BAGS
- PHOTOGRAPH LOCATION SYMBOL

**PLAN**  
 LL SEASON 2  
 WETLAND REHABILITATION AREA  
 INITIAL CONDITIONS

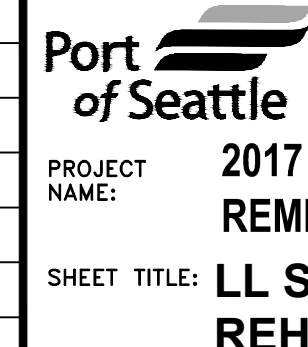


PROJECT ENGR./ARCH:  
 CL  
 DESIGNER:  
 SW, CL  
 DRAWN BY:  
 EB, AJ  
 SCALE:  
 AS SHOWN  
 DATE:  
 8/19/2016  
 CHECKED BY:  
 KEN VIGIL  
 CHECKED/APPROVED BY:  
 CURTIS LOEB



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SEA-TAC INTERNATIONAL AIRPORT  
 2017 LORA LAKE APARTMENTS MTCA  
 REMEDIATION PROJECTS  
 SHEET TITLE: **LL SEASON 2 WETLAND  
 REHABILITATION AREA INITIAL CONDITIONS**

POS WORK PROJECT NUMBER  
 104396  
 CONSULTANT'S PROJECT NUMBER  
 POS-LLA/POS-LL  
 POS PROJECT TRACKING NUMBER  
 STIA-1701 CG09.1





**PHOTO** A/CG09.1  
EXISTING DRAINAGE CHANNEL



**PHOTO** B/CG09.1  
SOUTH LAKE BERM LOW SPOT



**PHOTO** C/CG09.1  
EAST LAKE BERM AT CULVERT



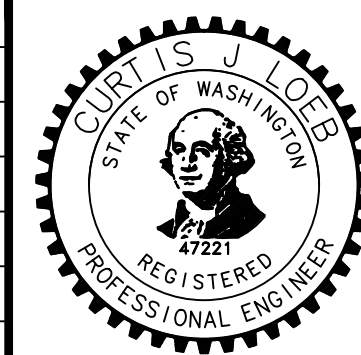
**PHOTO** D/CG09.1  
EXISTING STORMWATER OUTFALL

**NOTES:**

- PHOTOS A, B, AND C WERE TAKEN ON 1/20/16. PHOTO D WAS TAKEN ON 9/02/15.



PROJECT ENGR./ARCH:  
CL  
DESIGNER:  
SW, CL  
DRAWN BY:  
EB, AJ  
SCALE:  
NA  
DATE:  
8/19/2016  
CHECKED BY:  
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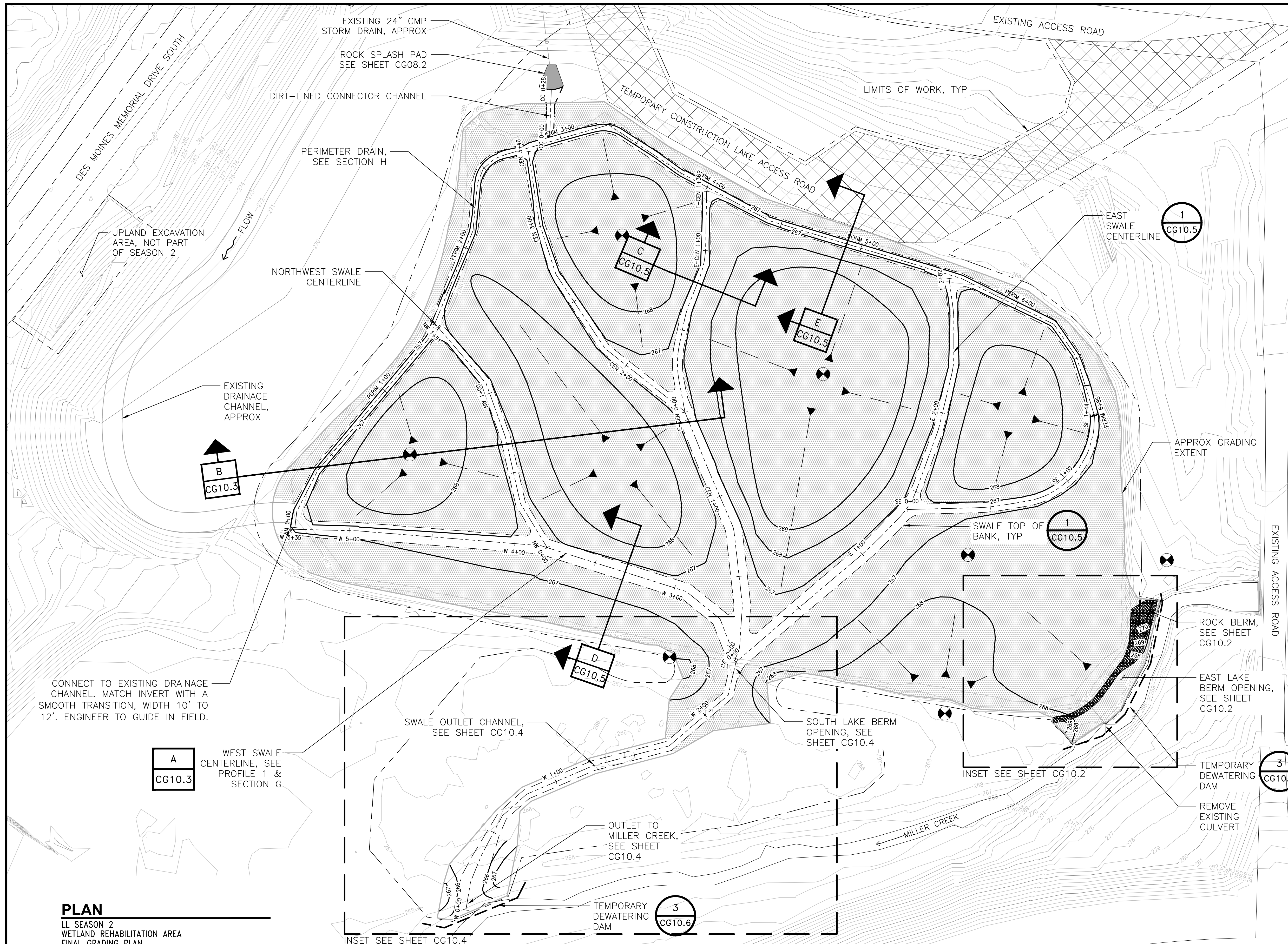
REVISIONS					
NO.	DATE	BY	DESCRIPTION	APP'D	

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME: 2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS  
SHEET TITLE: LL SEASON 2 WETLAND PHOTOS

POS WORK PROJECT NUMBER  
104396  
CONSULTANT'S PROJECT NUMBER  
POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER  
STIA-1701 CG09.2



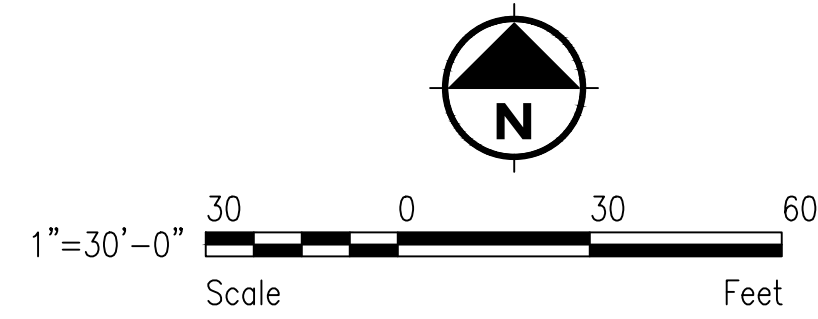


- NOTES:**
1. STAKE GRADES, EXCAVATION EXTENTS, AND CONTROL LINES FOR APPROVAL PRIOR TO EXCAVATION AND TOPSOIL PLACEMENT.
  2. CLEAR AND GRUB WITHIN LIMITS OF GRADING.
  3. THE SWALE CONTROL LINES SHOWN DEFINE THE CENTERLINE OF THE SWALES. CONSTRUCT SMOOTH CURVES BETWEEN DEFINED ALIGNMENT POINTS.
  4. PLACE TOPSOIL AND CONSTRUCT GRAVEL SWALES PER PLAN HEREON, TYPICAL SECTIONS ON SHEETS CG10.3, CG10.4 AND CG10.5 AND PER TABLE 1 AND 2 SHEET CG10.5.
  5. PLACE BIODEGRADABLE EROSION CONTROL FABRIC PER PLAN HEREON, AND INSTALL COIR LOGS AT THE TOP OF BANK ON ALL GRAVEL SWALES PER SWALE DETAIL 2 ON SHEET CG10.1 AND COIR LOG DETAIL 1 ON SHEET CG10.6.
  6. KEY BIODEGRADABLE EROSION CONTROL FABRIC INTO FINISHED GRADE ALONG COIR LOG AND AT EDGE OF GRADING IN ALL LOCATIONS.
  7. SEE SHEET LP01.1 FOR PLANTING PLAN.
  8. PROTECT MONITORING WELLS FROM DAMAGE.
  9. REMOVE EAST LAKE BERM PER SHEET CG10.2.

- SWALE CONTROL LINE ABBREVIATIONS:**
- |                        |       |
|------------------------|-------|
| 1. WEST SWALE:         | W     |
| 2. NORTHWEST SWALE:    | NW    |
| 3. CENTRAL SWALE:      | CEN   |
| 4. EAST CENTRAL SWALE: | E_CEN |
| 5. EAST SWALE:         | E     |
| 6. SOUTHEAST SWALE:    | SE    |
| 7. PERIMETER DRAIN:    | PERIM |
| 8. CONNECTOR CHANNEL:  | CC    |

- LEGEND:**
- INSTALL BIODEGRADABLE EROSION CONTROL FABRIC ON TOPSOIL AND KEY IN EDGES
  - MONITORING WELL, TO BE PROTECTED
  - LIMITS OF WORK
  - SLOPE MARKER, ARROW POINTS DOWNSLOPE
  - APPROX GRADING EXTENT
  - SWALE, TOP OF BANK
  - PROPOSED ELEV CONTOUR (NAVD 88)
  - EXISTING ELEV CONTOUR (NAVD 88)
  - TEMPORARY DEWATERING DAM

**PLAN**  
LL SEASON 2  
WETLAND REHABILITATION AREA  
FINAL GRADING PLAN



**REVISIONS**

NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

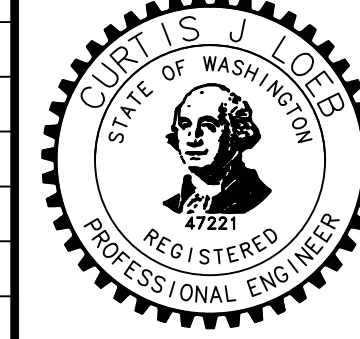
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POS DRAFTER:  
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POS DATE:  
POS CHECKED/APPROVED BY:

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2017 LORA LAKE APARTMENTS MTCA  
REMEDATION PROJECTS  
PROJECT NAME:  
SHEET TITLE: **LL SEASON 2 WETLAND FINAL GRADING PLAN**

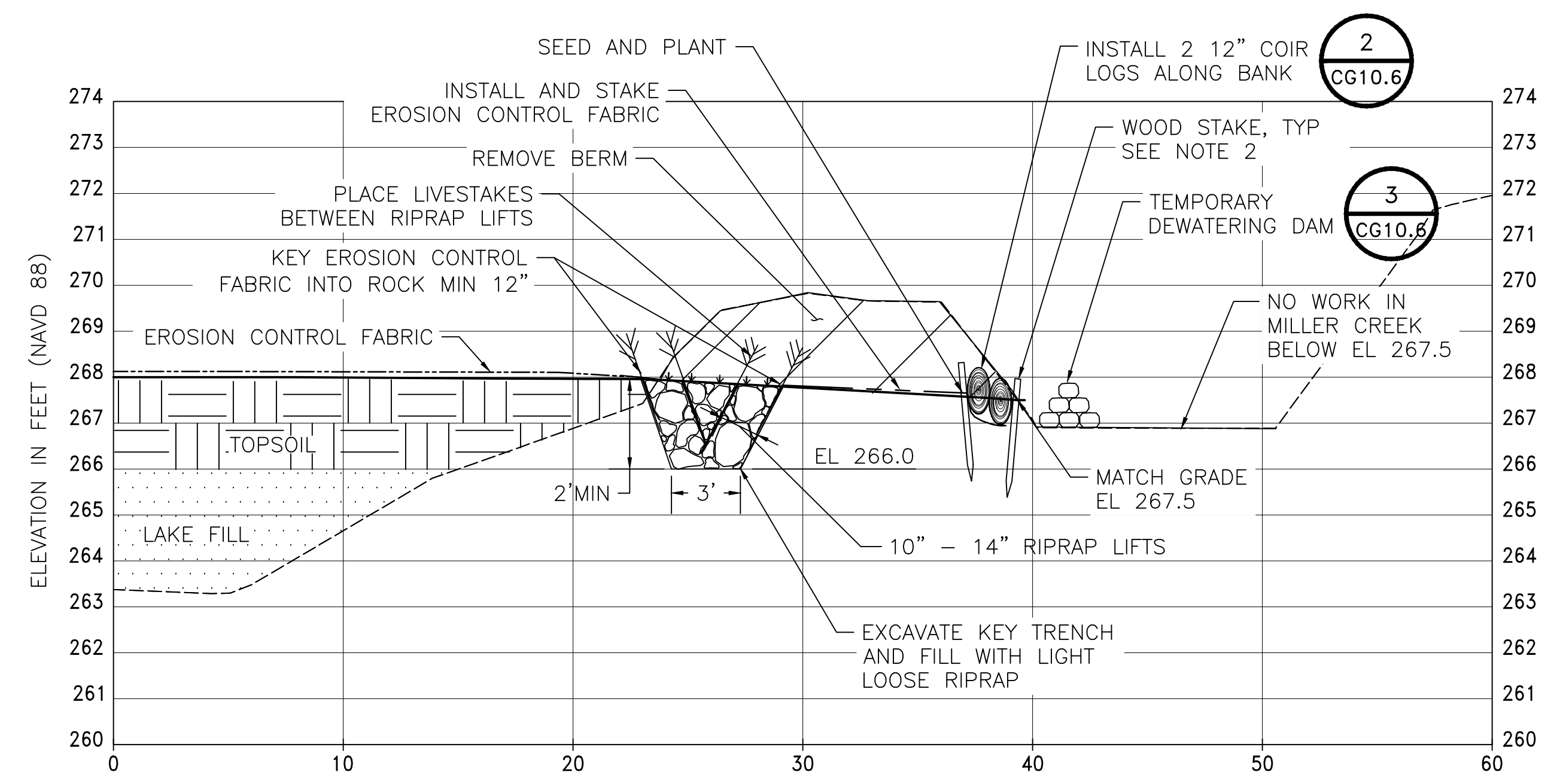
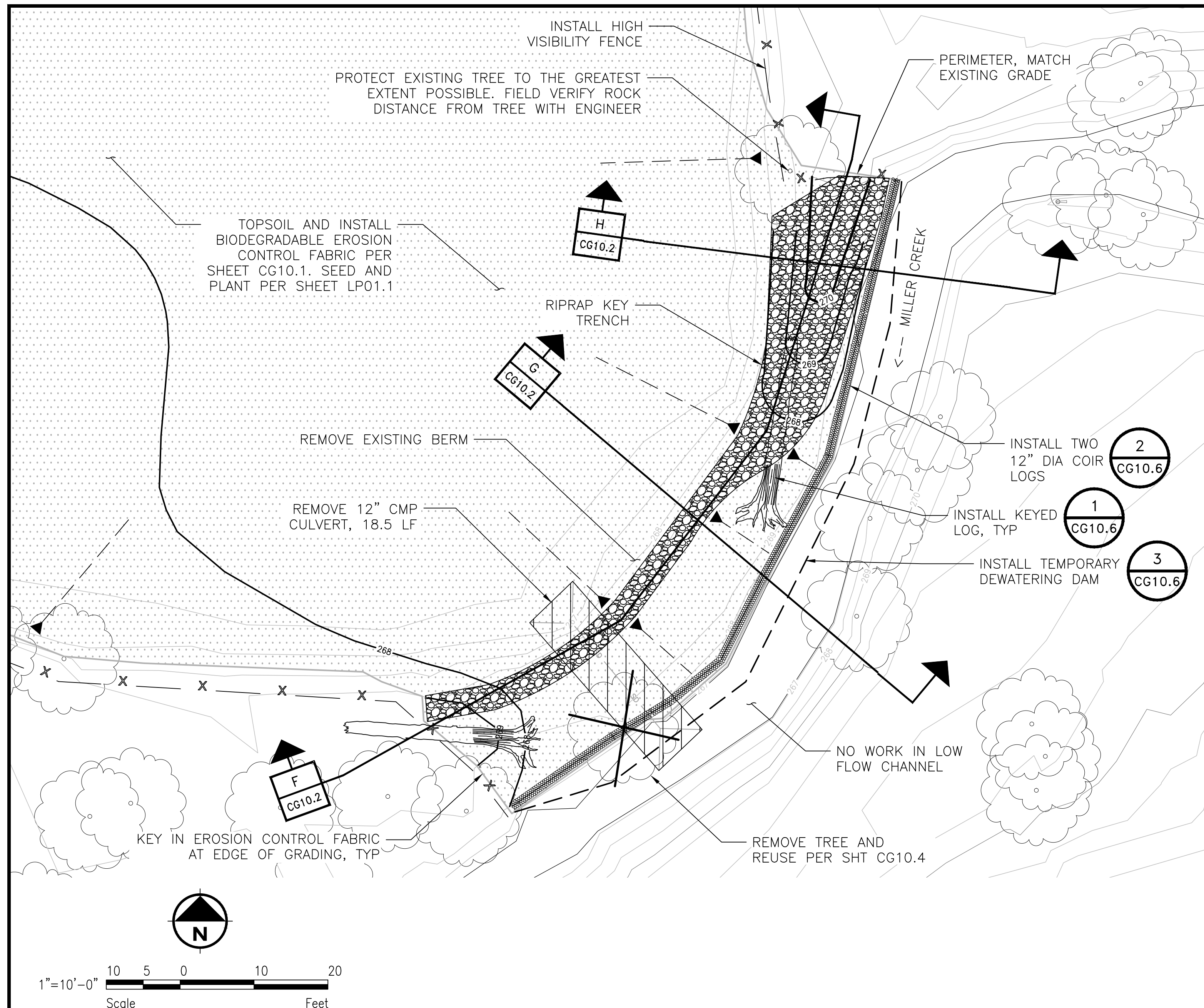
POS WORK PROJECT NUMBER: 104396  
CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER: STIA-1701 CG10.1

**ESA**  
5309 Shilshole Ave NW  
Suite 200  
Seattle, WA 98107  
P: (206) 789-9658  
F: (206) 789-9684

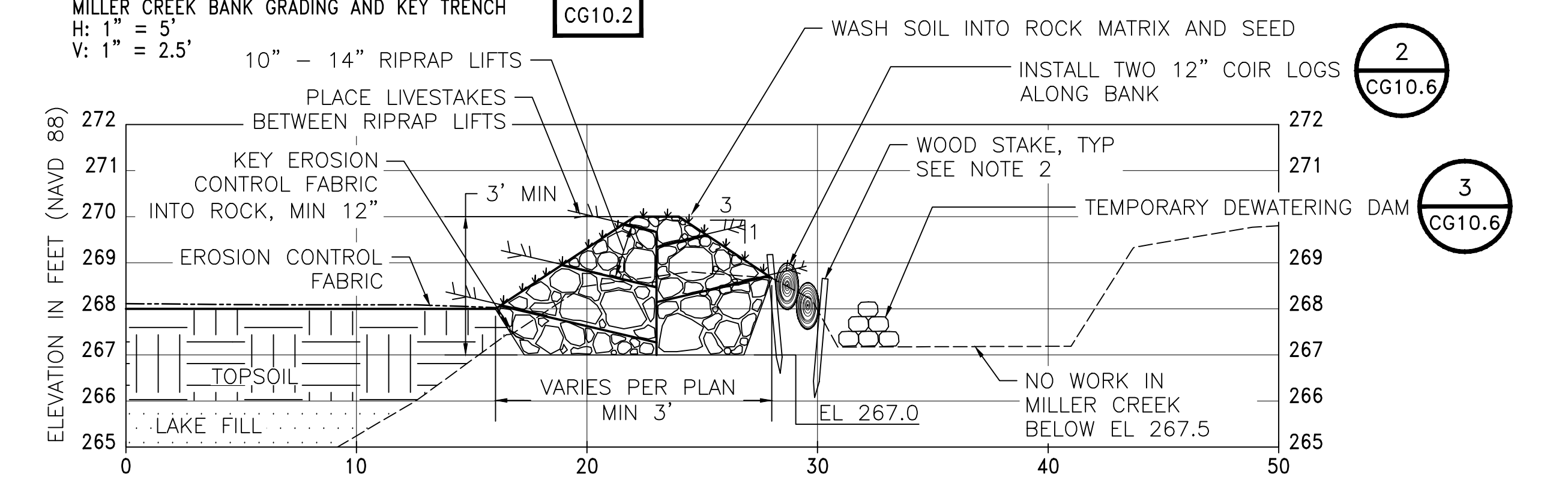
PROJECT ENGR./ARCH: CL  
DESIGNER: SW, CL  
DRAWN BY: EB, AJ  
SCALE: AS SHOWN  
DATE: 8/19/2016  
CHECKED BY: KEN VIGIL  
CHECKED/APPROVED BY: CURTIS LOEB





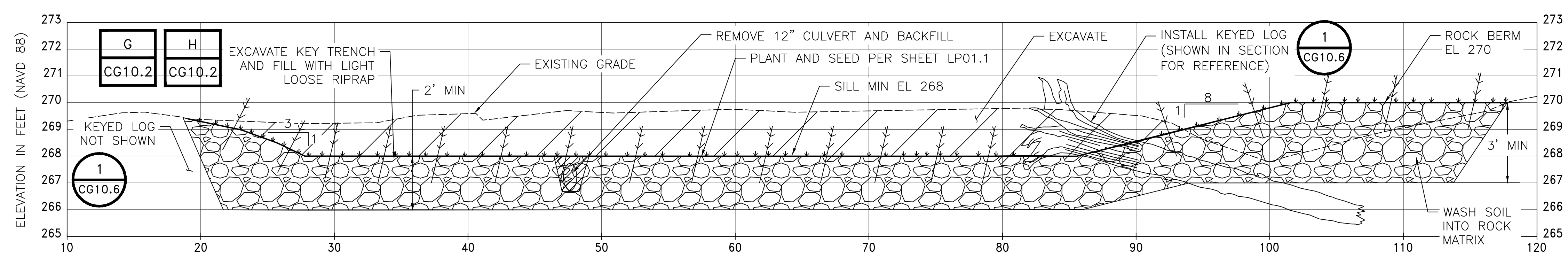


**SECTION G**  
 MILLER CREEK BANK GRADING AND KEY TRENCH  
 H: 1" = 5'  
 V: 1" = 2.5'

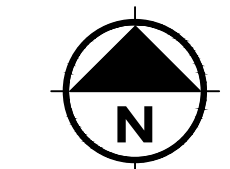


**SECTION H**  
 MILLER CREEK BANK GRADING AND ROCK BERM  
 H: 1" = 5'  
 V: 1" = 2.5'

- NOTES:**
- EXCAVATED BERM MATERIAL SHALL BE DISPOSED OF AS SUBTITLE D SOIL.
  - INSTALL TWO (2) 12" COIR LOGS ALONG THE BANK. WRAP BOTH COIR LOGS WITH COIR TWINE AND SECURE TO 30" WOOD STAKES PER DETAIL 2 ON SHEET CG10.6.
  - INSTALL RIPRAP IN 10" TO 14" LIFTS WITH LIVESTAKES BETWEEN LAYERS.
  - WASH SOIL INTO THE ROCK MATRIX AND SEED. FINAL ACCEPTANCE OF RIPRAP, WOOD STAKES, COIR LOGS, AND KEYED LOGS SHALL BE PER ENGINEER.

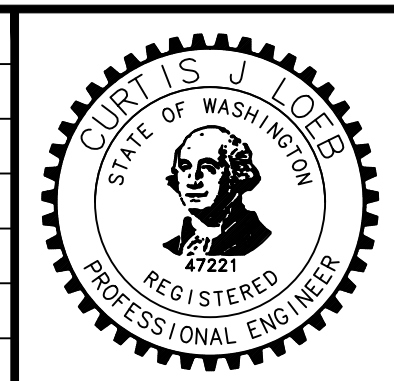


**SECTION F**  
 MILLER CREEK BANK GRADING  
 H: 1" = 5'  
 V: 1" = 2.5'



**ESA**  
 5309 Shilshole Ave NW  
 Suite 200  
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PROJECT ENGR./ARCH: CL  
 DESIGNER: SW, CL  
 DRAWN BY: EB, AJ  
 SCALE: AS SHOWN  
 DATE: 8/19/2016  
 CHECKED BY: KEN WIGIL  
 CHECKED/APPROVED BY: CURTIS LOEB



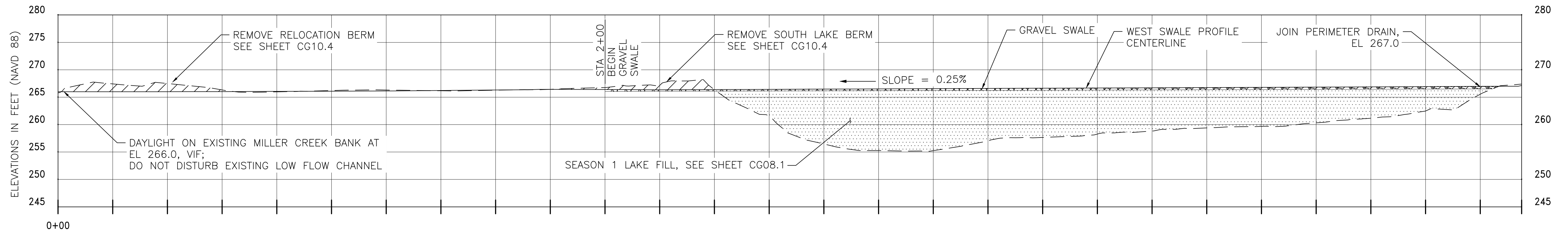
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POS DESIGN ENGINEER:	
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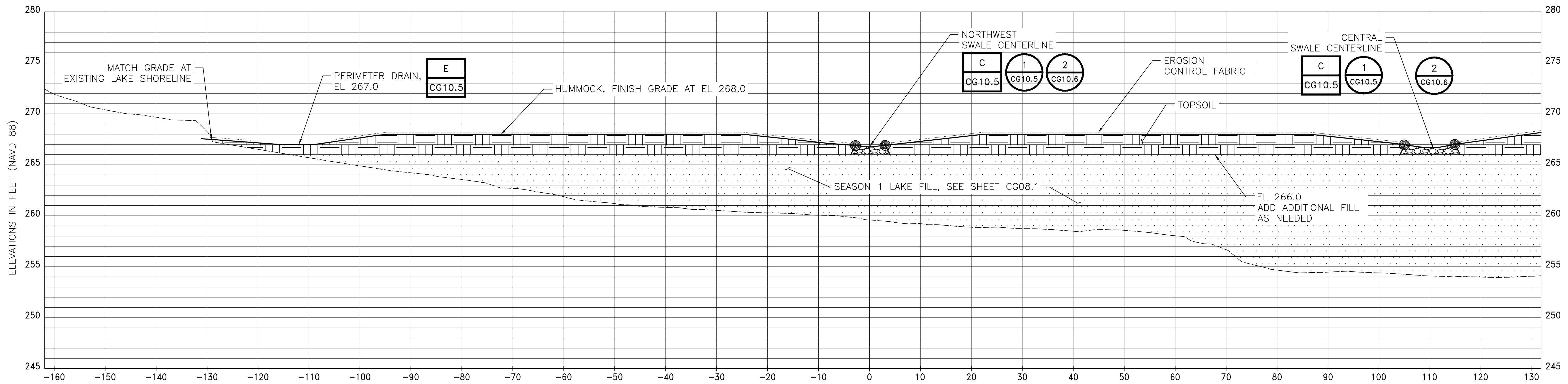
**Port of Seattle**  
 SEA-TAC INTERNATIONAL AIRPORT  
 2017 LORA LAKE APARTMENTS MTCA  
 REMEDIATION PROJECTS  
 SHEET TITLE: **LL SEASON 2 WETLAND EAST LAKE BERM OPENING**

POS WORK PROJECT NUMBER: 104396  
 CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
 POS PROJECT TRACKING NUMBER: STIA-1701 CG10.2





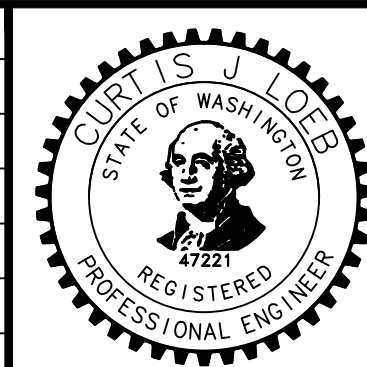
**PROFILE** A  
 WEST SWALE  
 H: 1" = 20'  
 V: 1" = 10'



**SECTION** B  
 WETLAND REHABILITATION, TYPICAL  
 H: 1" = 10'  
 V: 1" = 5'



PROJECT ENGR./ARCH:  
 CL  
 DESIGNER:  
 SW, CL  
 DRAWN BY:  
 EB, AJ  
 SCALE:  
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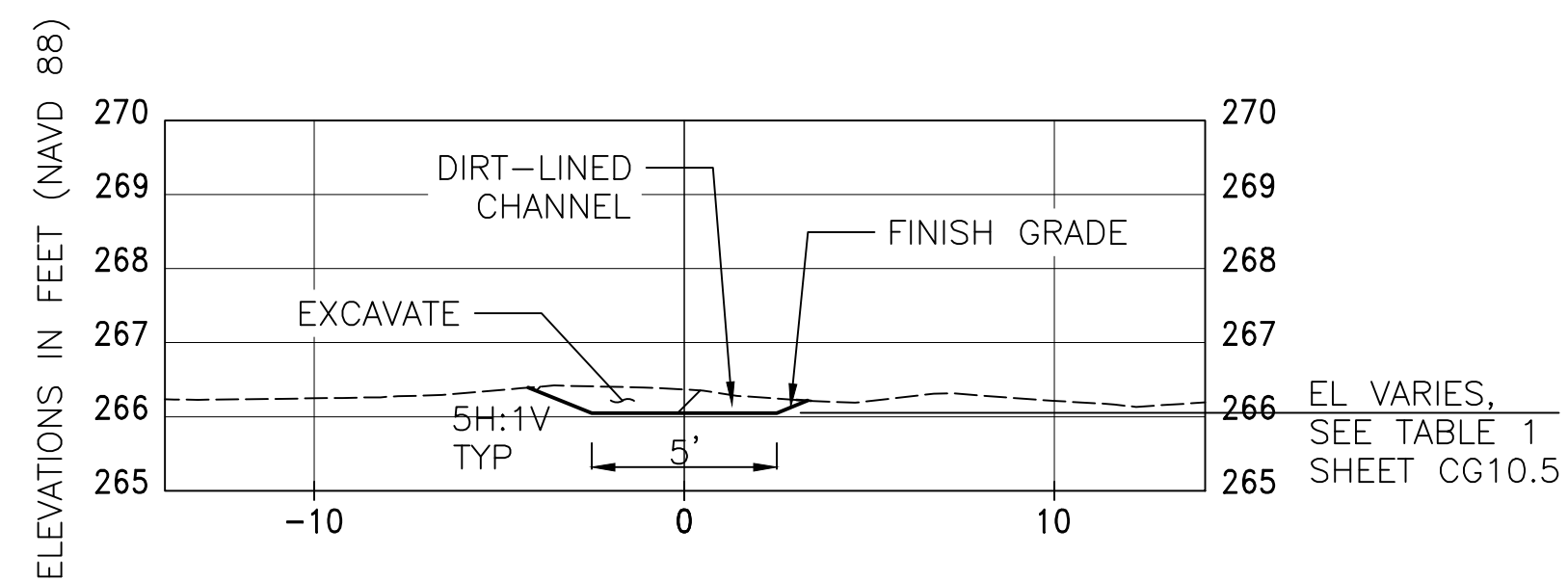


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NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
 POS PROJECT ENGINEER:  
 POS DESIGN ENGINEER:  
 POS DRAFTER:  
 POS SCALE:  
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**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
 PROJECT NAME: 2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS  
 SHEET TITLE: LL SEASON 2 WETLAND GRADING SECTIONS

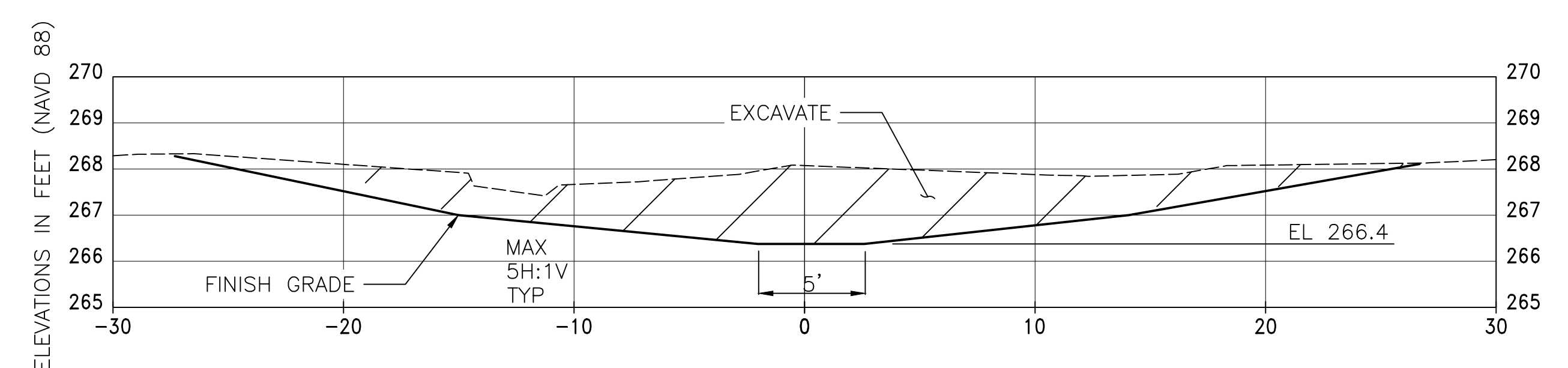
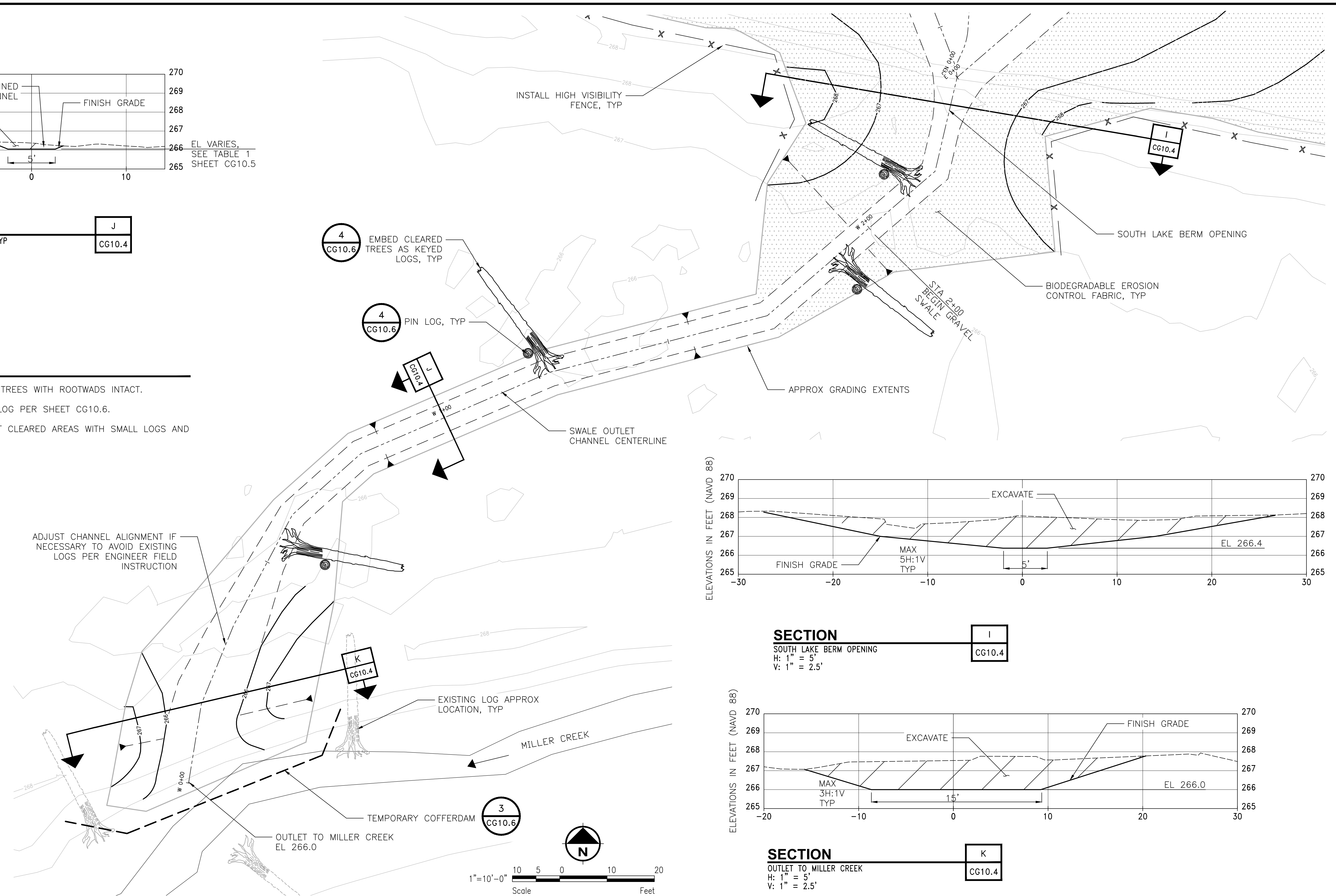
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 CONSULTANT'S PROJECT NUMBER  
 POS-LLA/POS-LL  
 POS PROJECT TRACKING NUMBER  
 STIA-1701 CG10.3



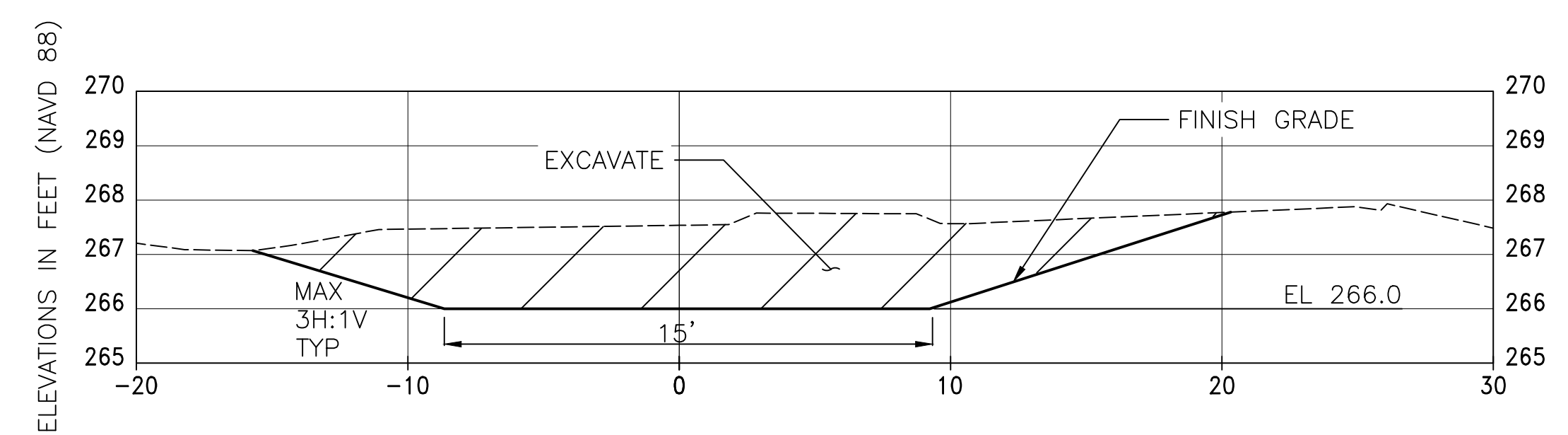
**SECTION J**  
 SWALE OUTLET CHANNEL, TYP  
 H: 1" = 5'  
 V: 1" = 2.5'

**NOTES:**

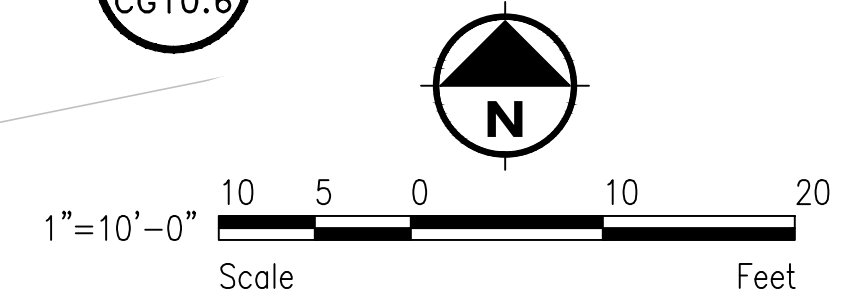
1. SALVAGE CLEARED TREES WITH ROOTWADS INTACT.
2. INSTALL CLEARED LOG PER SHEET CG10.6.
3. REDRESS ADJACENT CLEARED AREAS WITH SMALL LOGS AND DEBRIS.



**SECTION I**  
 SOUTH LAKE BERM OPENING  
 H: 1" = 5'  
 V: 1" = 2.5'



**SECTION K**  
 OUTLET TO MILLER CREEK  
 H: 1" = 5'  
 V: 1" = 2.5'



PROJECT ENGR./ARCH:  
 CL  
 DESIGNER:  
 SW, CL  
 DRAWN BY:  
 EB, AJ  
 SCALE:  
 AS SHOWN  
 DATE:  
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 KEN VIGIL  
 CHECKED/APPROVED BY:  
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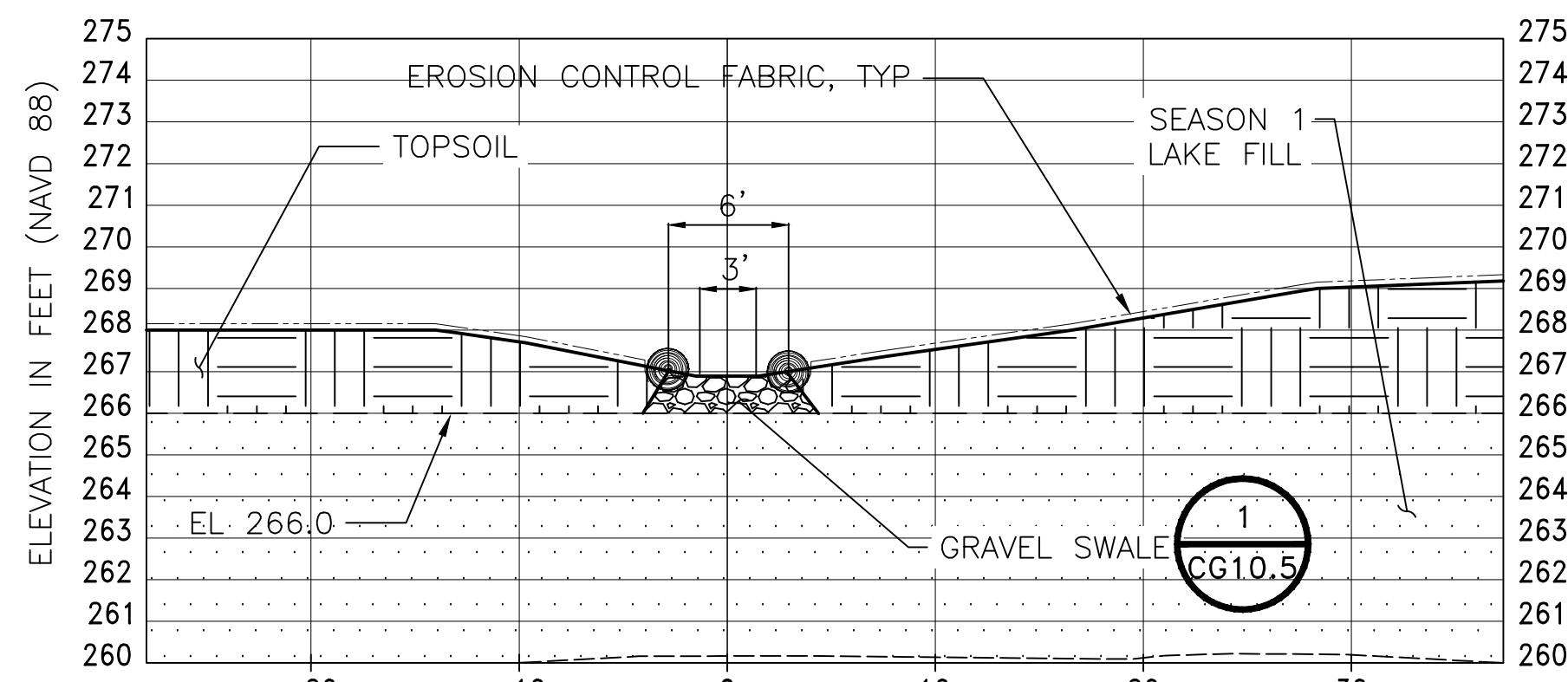


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NO.	DATE	BY	DESCRIPTION	APP'D	

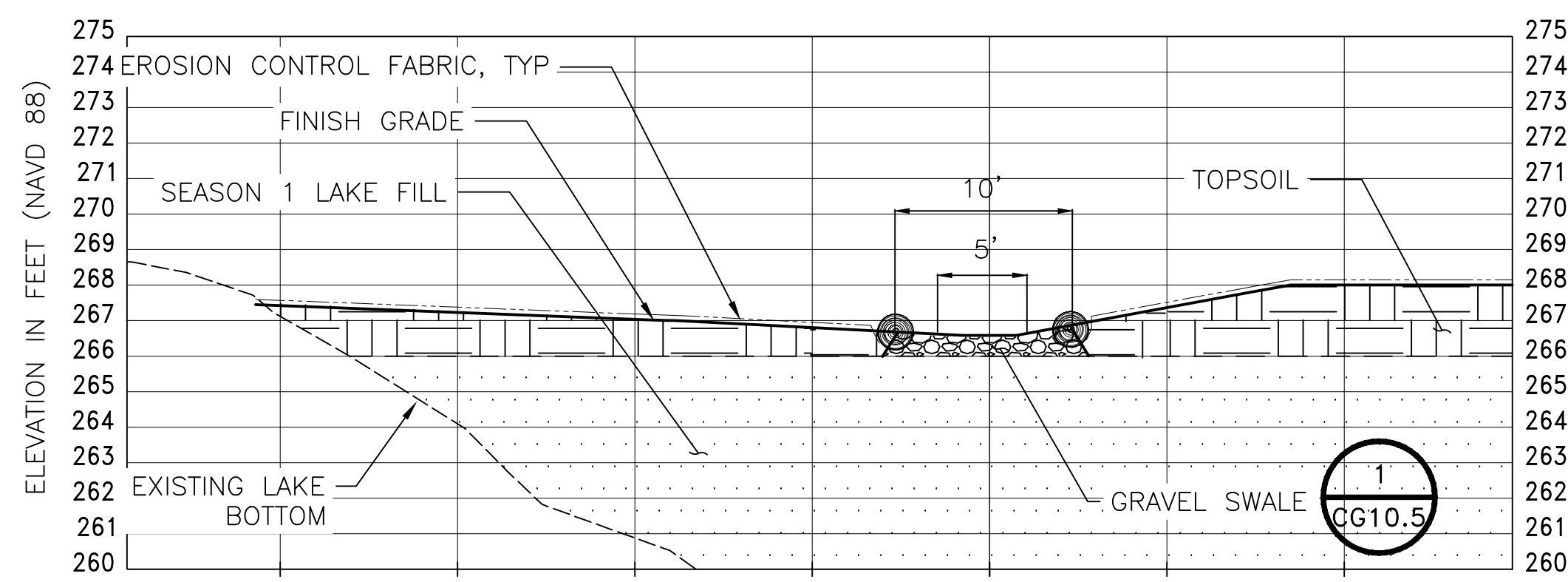
POS PROJECT MANAGER:  
 POS PROJECT ENGINEER:  
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 POS DRAFTER:  
 POS SCALE:  
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 2017 LORA LAKE APARTMENTS MTCA  
 REMEDIATION PROJECTS  
 SHEET TITLE:  
**LL SEASON 2 WETLAND  
 OUTLET TO MILLER CREEK**

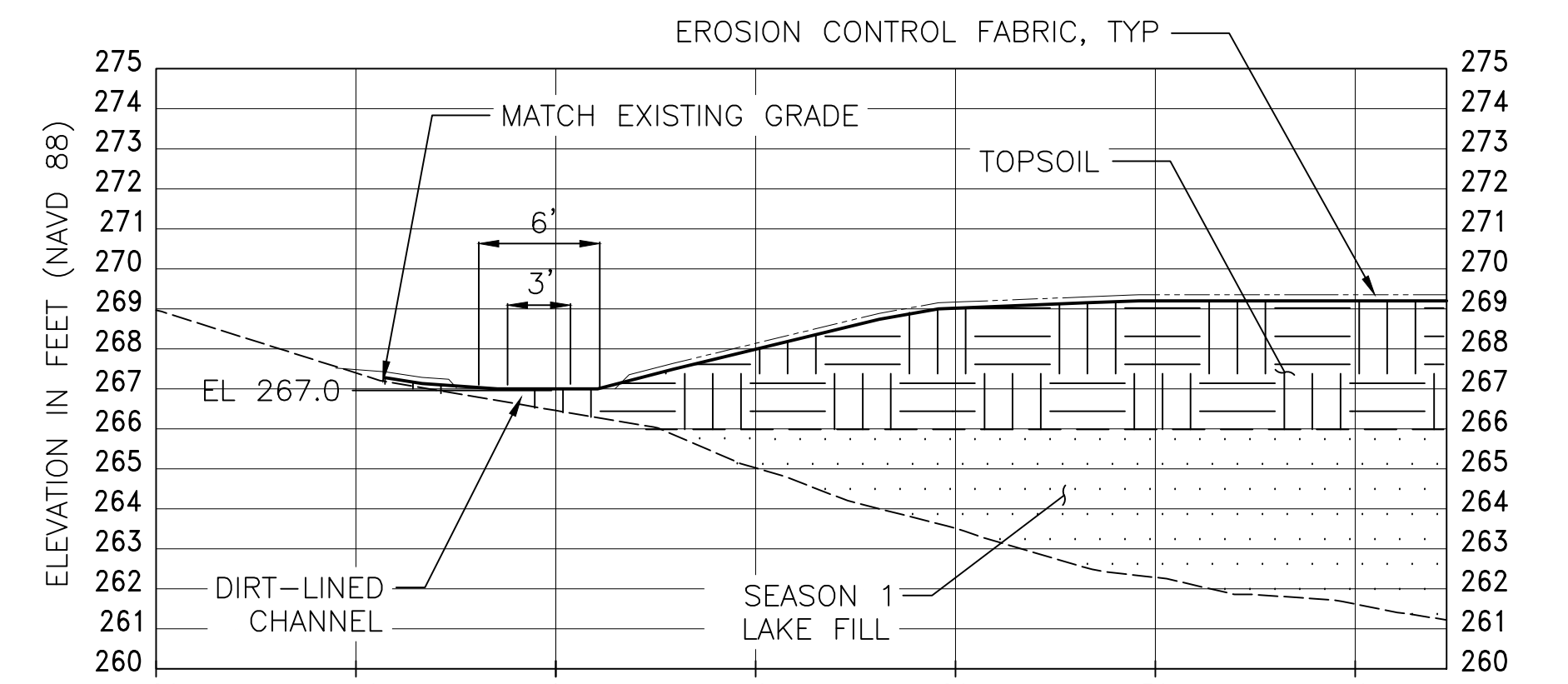
POS WORK PROJECT NUMBER  
 104396  
 CONSULTANT'S PROJECT NUMBER  
 POS-LLA/POS-LL  
 POS PROJECT TRACKING NUMBER  
 STIA-1701 CG10.4



**SECTION C**  
 SMALL DRAINAGE SWALE, TYP  
 H: 1" = 8'  
 V: 1" = 4'



**SECTION D**  
 LARGE DRAINAGE SWALE, TYP  
 H: 1" = 8'  
 V: 1" = 4'



**SECTION E**  
 PERIMETER DRAIN, TYP  
 H: 1" = 8'  
 V: 1" = 4'

**TABLE 1: GRAVEL SWALE SECTIONS**

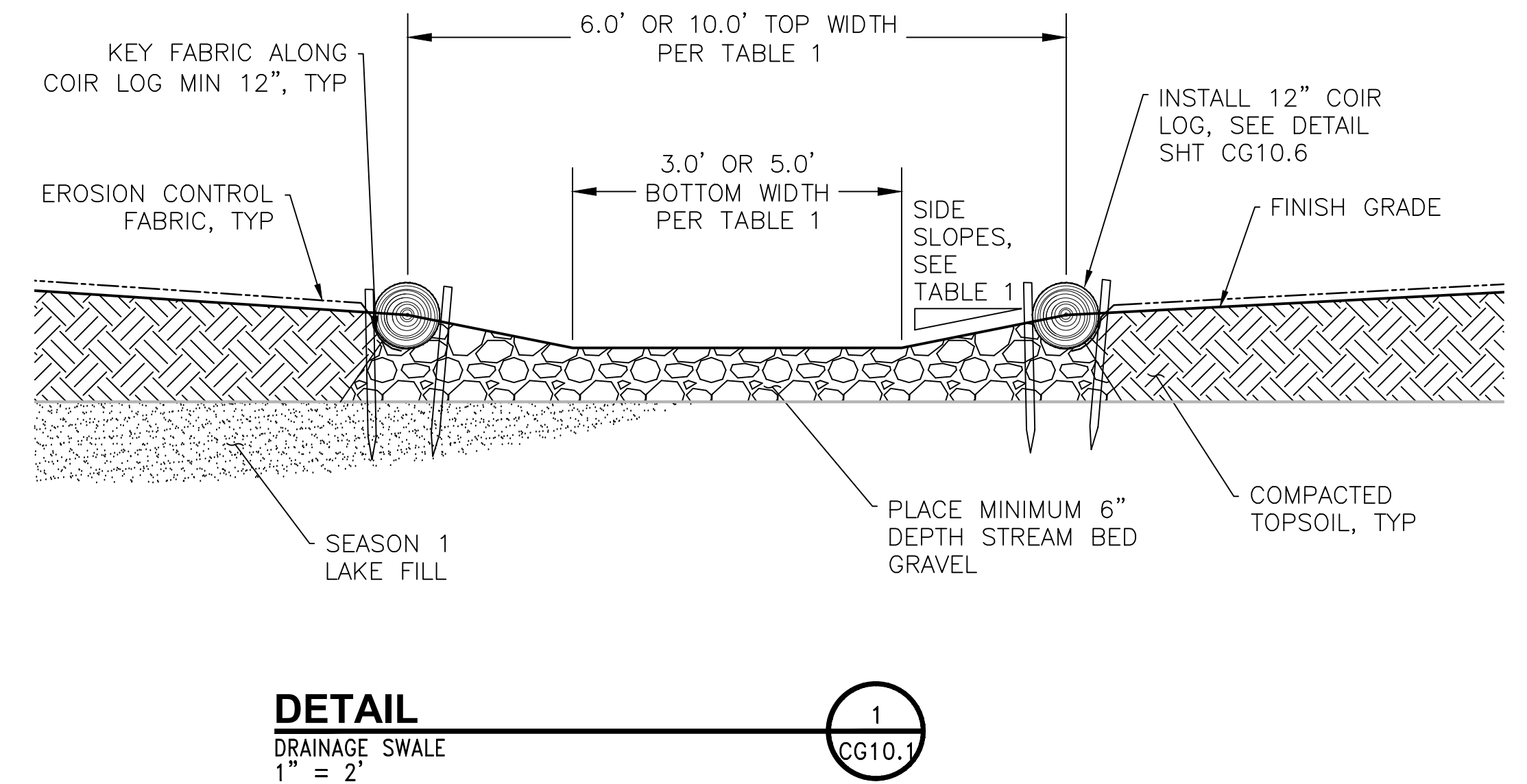
STATION	INVERT ELEVATION, FT NAVD 88	BOTTOM WIDTH, FT	TOP WIDTH, FT	SIDE SLOPE	NOTES
NW 1+51	267.0	3.0	6.0	3:1	INTERSECT PERIMETER DRAIN AT PERIM 1+50
NW 1+00	266.9	3.0	6.0	3:1	
NW 0+00	266.7	3.0	6.0	3:1	FLOW INTO WEST SWALE AT W 3+80
W 5+35	267.0	5.0	10.0	5:1	CONNECT TO DRAINAGE CHANNEL
W 5+32	267.0	5.0	10.0	5:1	INTERSECT PERIMETER DRAIN AT PERIM 0+00
W 5+00	266.9	5.0	10.0	5:1	
W 4+00	266.7	5.0	10.0	5:1	
W 3+80	266.7	5.0	10.0	5:1	NORTHWEST SWALE FLOWS IN
W 3+00	266.5	5.0	10.0	5:1	
W 2+40	266.4	5.0	10.0	5:1	CENTRAL AND EAST SWALES FLOW IN
W 2+00	266.3	5.0	10.0	5:1	TRANSITION FROM DIRT TO GRAVEL
W 1+00	266.1	5.0	10.0	5:1	DIRT LINED
W 0+00	266.0	5.0	10.0	5:1	OUTLET TO MILLER CREEK, DIRT LINED
CEN 3+46	267.0	3.0	6.0	3:1	INTERSECT PERIMETER DRAIN AT PERIM 2+79
CEN 3+00	266.9	3.0	6.0	3:1	
CEN 2+00	266.8	3.0	6.0	3:1	
CEN 1+55	266.7	5.0	10.0	5:1	EAST-CENTRAL SWALE FLOWS IN
CEN 1+00	266.6	5.0	10.0	5:1	
CEN 0+00	266.4	5.0	10.0	5:1	FLOWS INTO WEST SWALE AT W 2+40
E-CEN 1+36	267.0	3.0	6.0	3:1	INTERSECT PERIMETER DRAIN AT PERIM 4+00
E-CEN 1+00	266.9	3.0	6.0	3:1	
E-CEN 0+00	266.7	3.0	6.0	3:1	FLOWS INTO CENTRAL SWALE AT CEN 1+55
E 2+82	267.0	3.0	6.0	3:1	INTERSECT PERIMETER DRAIN AT PERIM 5+54
E 2+00	266.8	3.0	6.0	3:1	
E 1+38	266.7	5.0	10.0	5:1	SOUTHEAST SWALE FLOWS IN
E 1+00	266.6	5.0	10.0	5:1	
E 0+00	266.4	5.0	10.0	5:1	FLOWS INTO WEST SWALE AT W 2+40
SE 1+44	267.0	3.0	6.0	3:1	INTERSECT PERIMETER DRAIN AT PERIM 6+86
SE 1+00	266.9	3.0	6.0	3:1	
SE 0+00	266.7	3.0	6.0	3:1	FLOWS INTO EAST SWALE AT E 1+38

**TABLE 2: PERIMETER DRAIN SECTIONS**

STATION	INVERT ELEVATION, FT NAVD 88	BOTTOM WIDTH, FT	TOP WIDTH, FT	SIDE SLOPE	NOTES
PERIM 6+86	267.0	3.0	6.0	3:1	INTERSECT SOUTHEAST SWALE
PERIM 6+00	267.0	3.0	6.0	3:1	
PERIM 5+54	267.0	3.0	6.0	3:1	INTERSECT EAST SWALE
PERIM 5+00	267.0	3.0	6.0	3:1	
PERIM 4+00	267.0	3.0	6.0	3:1	INTERSECT EAST-CENTRAL SWALE
PERIM 3+00	267.0	3.0	6.0	3:1	
PERIM 2+93	267.0	3.0	6.0	3:1	INTERSECT CONNECTOR CHANNEL
PERIM 2+79	267.0	3.0	6.0	3:1	INTERSECT CENTRAL SWALE
PERIM 2+00	267.0	3.0	6.0	3:1	
PERIM 1+50	267.0	3.0	6.0	3:1	INTERSECT NORTHWEST SWALE
PERIM 1+00	267.0	3.0	6.0	3:1	
PERIM 0+00	267.0	3.0	6.0	3:1	INTERSECT WEST SWALE
CC 0+28	267.7	4.0	8.0	8:1	CONNECT TO SPLASH PAD, NOTE 2
CC 0+20	267.5	3.0	6.0	3:1	
CC 0+00	267.0	3.0	6.0	3:1	INTERSECT PERIMETER DRAIN

**NOTES:**

- SWALE SIDE SLOPES SHALL VARY PER TABLE 1 AND 2, AND PER PLAN ON SHEET CG10.1. SWALE SIDE SLOPES SHALL VARY WITHOUT ABRUPT CHANGES, IN A NATURALLY-VARYING MANNER. FINAL GRADING SHALL BE APPROVED BY OWNER'S REPRESENTATIVE.
- FIELD FIT CONNECTOR CHANNEL INVERT ELEVATIONS TO MATCH SPLASH PAD ELEVATION AND PERIMETER DRAIN INVERT AND TO MAINTAIN A CONSTANT SLOPE.



**DETAIL 1**  
 DRAINAGE SWALE  
 1" = 2'



PROJECT ENGR./ARCH:  
 CL  
 DESIGNER:  
 SW, CL  
 DRAWN BY:  
 EB, AJ  
 SCALE:  
 AS SHOWN  
 DATE:  
 8/19/2016  
 CHECKED BY:  
 KEN VIGIL  
 CHECKED/APPROVED BY:  
 CURTIS LOEB

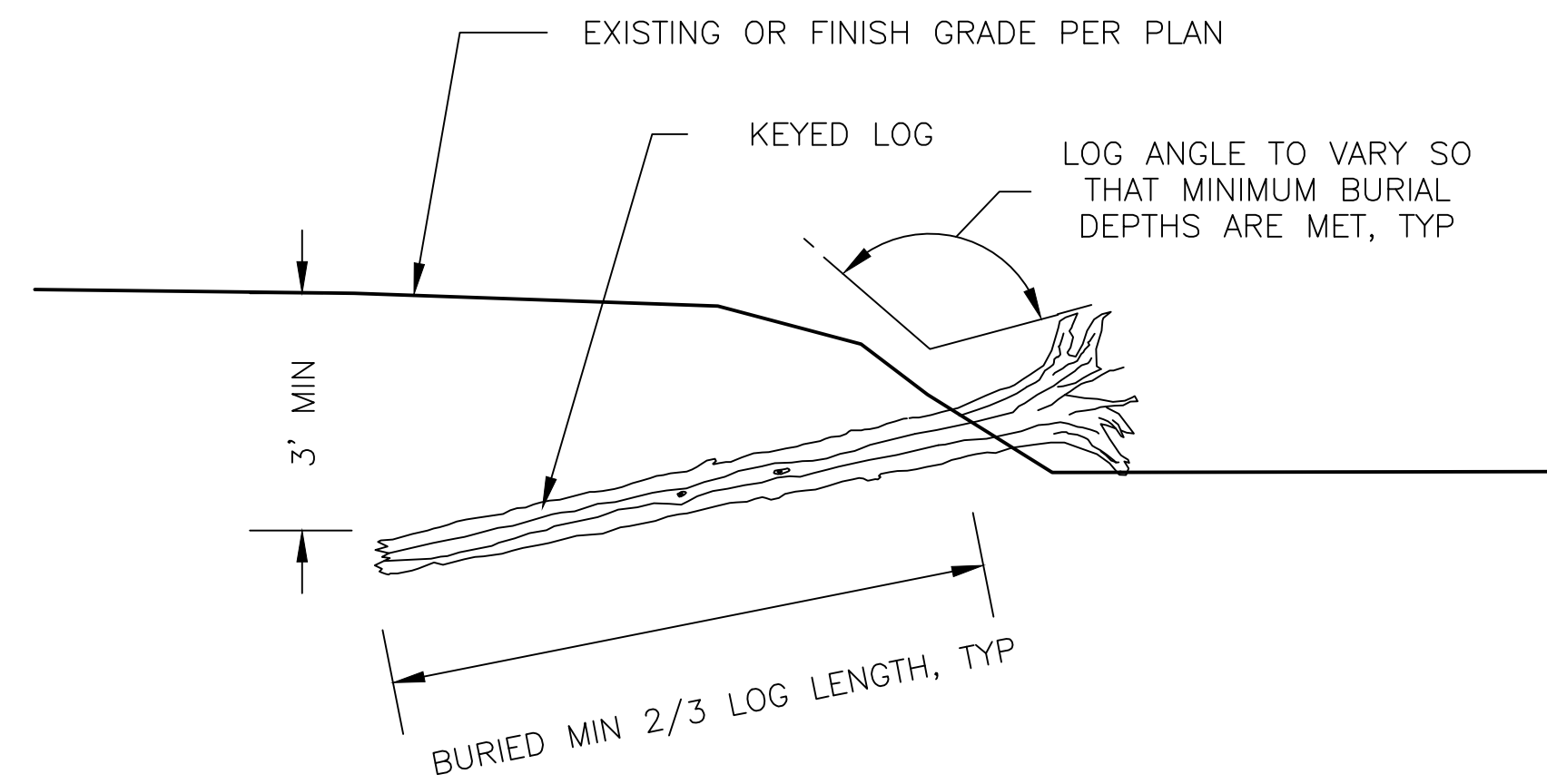


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POS PROJECT MANAGER:  
 POS PROJECT ENGINEER:  
 POS DESIGN ENGINEER:  
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 POS DATE:  
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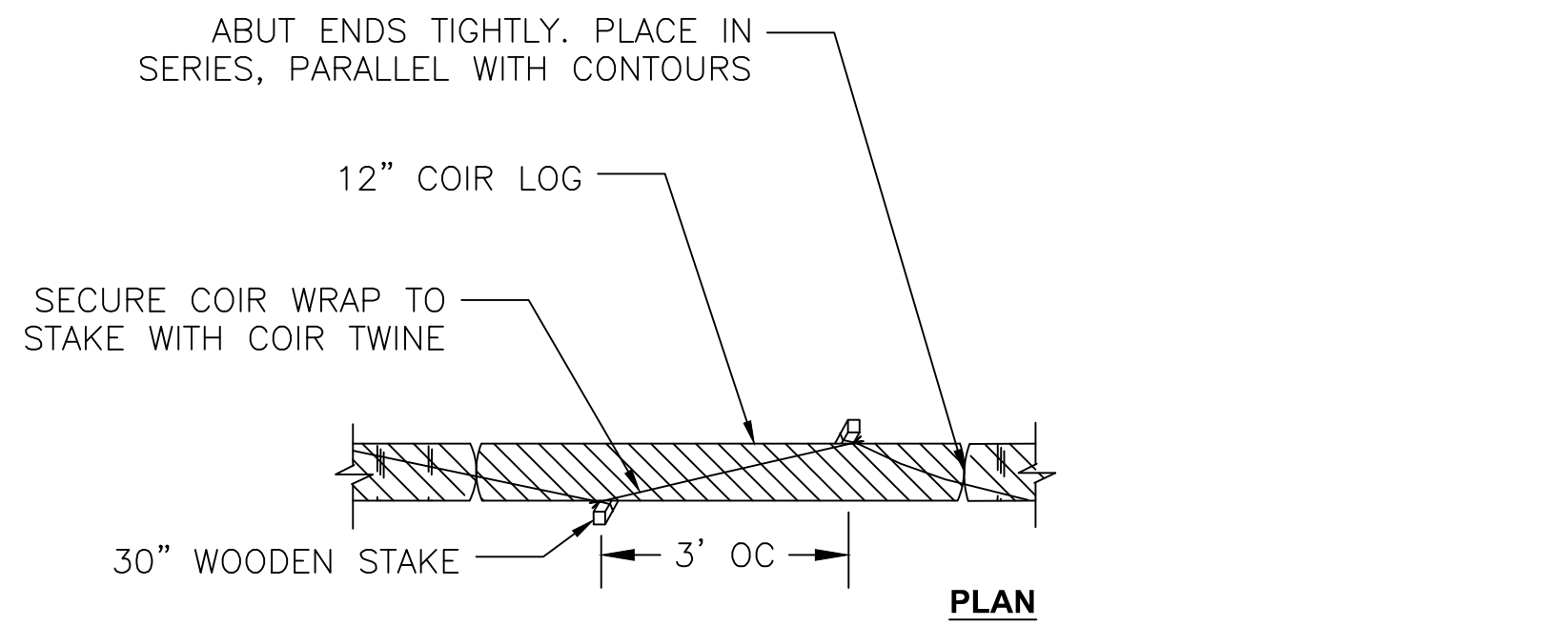
**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
 PROJECT NAME:  
 2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS  
 SHEET TITLE:  
 LL WETLAND SEASON 2 GRAVEL SWALE SECTIONS

POS WORK PROJECT NUMBER  
 104396  
 CONSULTANT'S PROJECT NUMBER  
 POS-LLA/POS-LL  
 POS PROJECT TRACKING NUMBER  
 STIA-1701 CG10.5



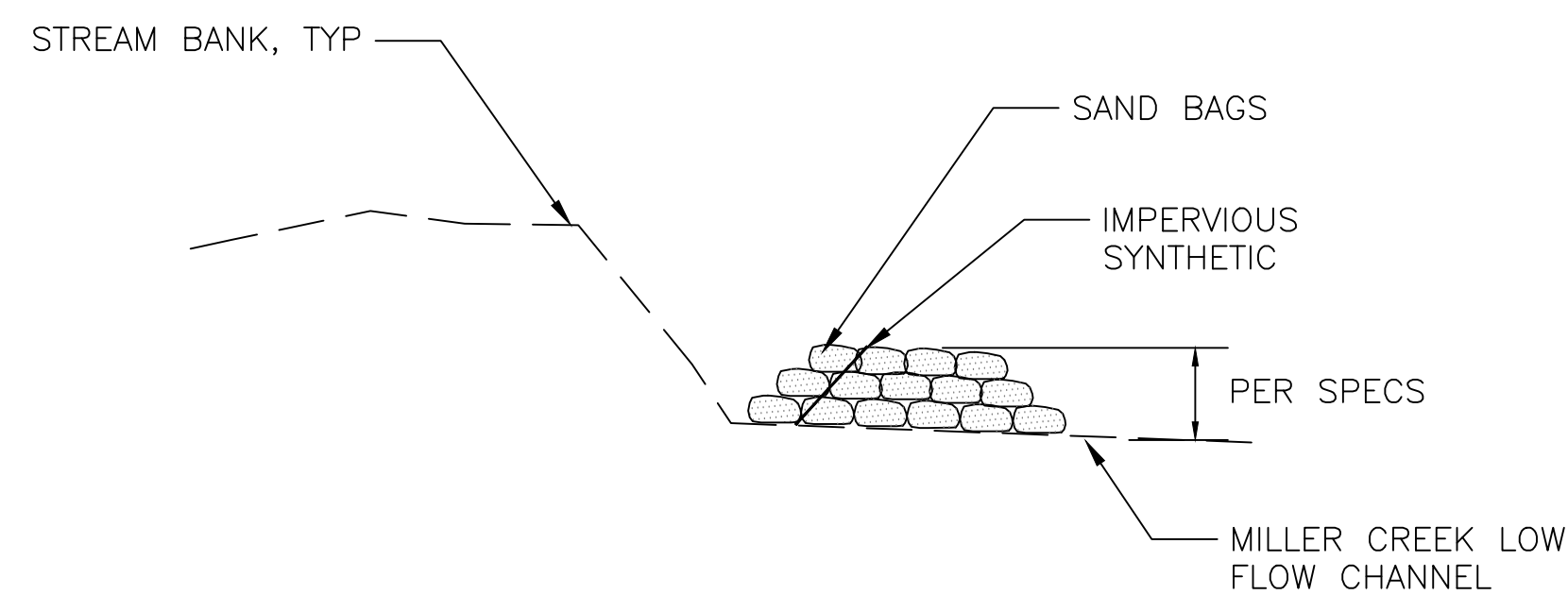
**DETAIL**  
LARGE WOOD INSTALLATION AT EAST BERM  
NTS

1  
CG10.2



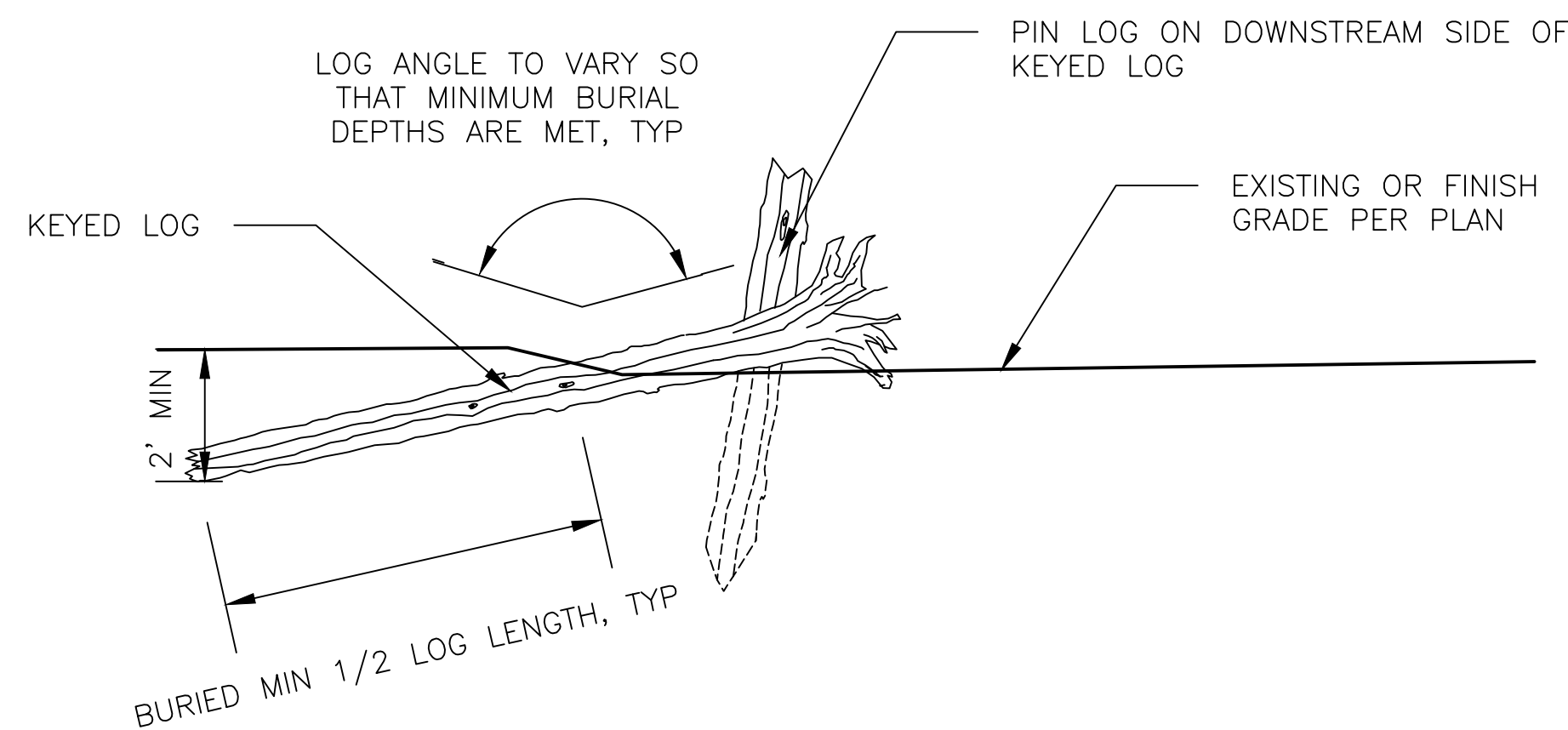
**DETAIL**  
COIR LOG INSTALLATION  
NTS

2  
CG10.1



**DETAIL**  
DEWATERING DAM - SECTION  
NTS

3  
CG10.1



**DETAIL**  
LARGE WOOD INSTALLATION AT MILLER CRK OUTLET  
NTS

4  
CG10.4

- NOTES:**
1. INSTALL 12" COIR LOGS AT THE TOP OF BANK ON BOTH SIDES OF THE GRAVEL SWALES. SECURE COIR LOG WITH WOOD STAKE AND COIR TWINE AS SPECIFIED.
  2. KEY BIODEGRADABLE EROSION CONTROL FABRIC ALONG COIR LOGS AND AT EDGE OF GRADING AT ALL LOCATIONS AS SHOWN IN THE PLANS.
  3. INSTALL DEWATERING DAMS AS SHOWN ON PLAN TO ISOLATE STREAM BANK WORK AREAS.
  4. IN ADDITION TO SAND BAGS, USE AN IMPERVIOUS SYNTHETIC LINER TO REDUCE PERMEABILITY OF DEWATERING DAM.
  5. HEIGHT OF THE DEWATERING DAMS SHALL BE HIGH ENOUGH TO PREVENT MILLER CREEK FLOWS FROM ENTERING THE WORK AREA.
  6. DAM MATERIALS SHALL BE INCLUDED IN THE CONTRACTOR'S WETLAND REHABILITATION PLAN.
  7. FULLY REMOVE DEWATERING DAMS AFTER THE AREA HAS BEEN STABILIZED.



PROJECT ENGR./ARCH:  
CL  
DESIGNER:  
CL  
DRAWN BY:  
EB, AJ  
SCALE:  
NA  
DATE:  
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KEN VIGIL  
CHECKED/APPROVED BY:  
CURTIS LOEB

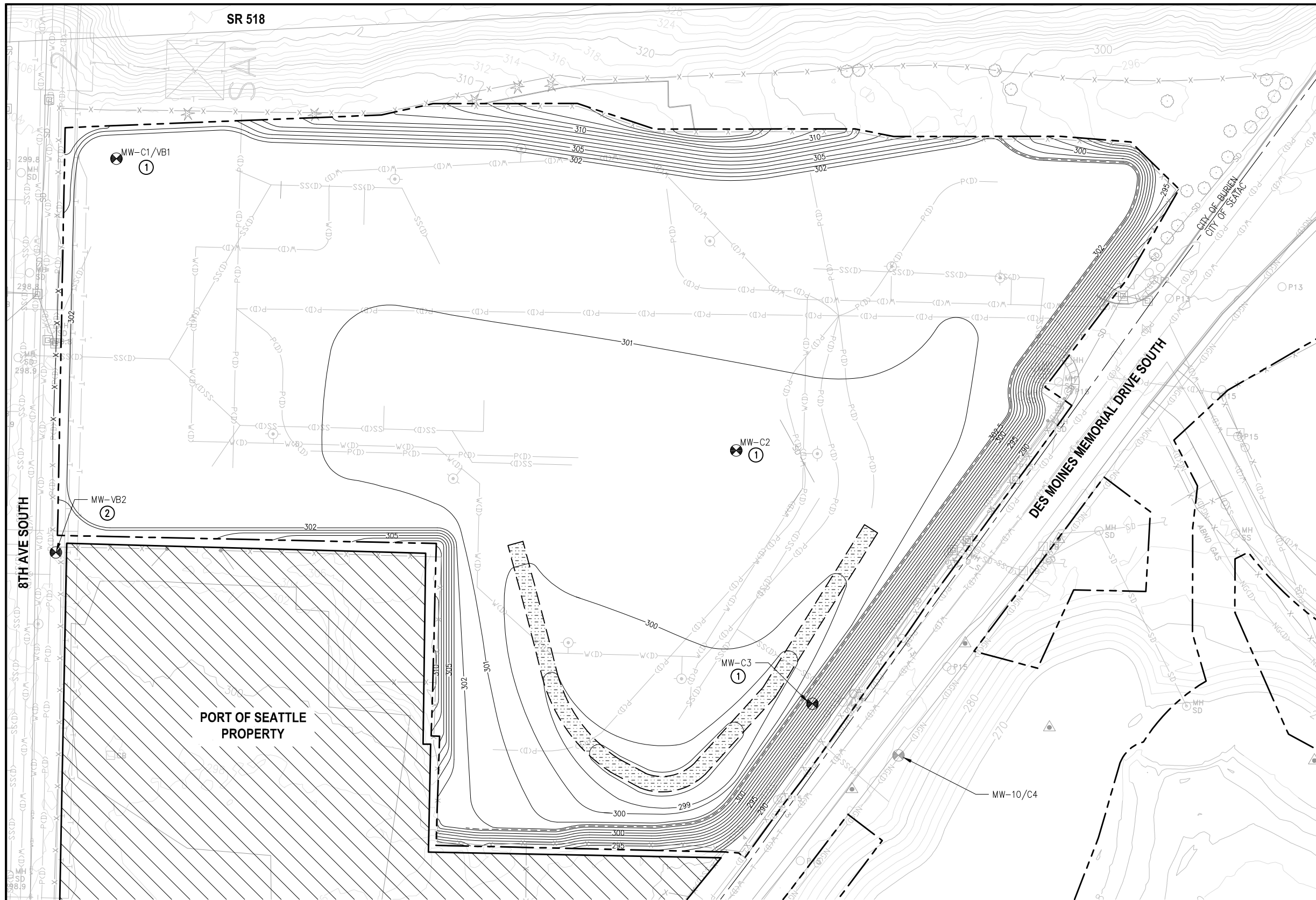


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POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME: 2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS  
SHEET TITLE: LL SEASON 2 WETLAND DETAILS

POS WORK PROJECT NUMBER  
104396  
CONSULTANT'S PROJECT NUMBER  
POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER  
STIA-1701 CG10.6

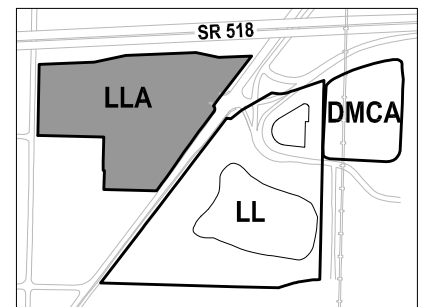
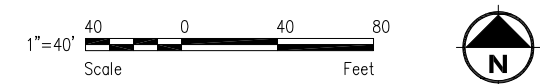


MONITORING POINT LOCATIONS		
MONITORING POINT	NORTHING	EASTING
MW-C1/VB1	174848.80	1271956.00
MW-C2	174622.80	1272436.00
MW-C3	174426.60	1272495.00
MW-VB2	174543.83	1271909.11

- NOTES:**
- GROUNDWATER MONITORING WELLS WILL BE INSTALLED PER DETAIL 1 ON CU02.2.
  - GROUNDWATER MONITORING WELL TO BE INSTALLED PER DETAIL 2 ON CU02.2.
  - DEPTH OF INSTALLATION FOR GROUNDWATER MONITORING WELLS WILL BE A FIELD DECISION BASED ON GROUNDWATER DEPTH AT THE TIME OF DRILLING.
  - SEE SHEET CB01.2 FOR ON-SITE UTILITY DEMOLITION AND INFORMATION

- LEGEND:**
- X-X- FENCE
  - - - - PROJECT WORK AREA LIMITS
  - 270— ELEVATION CONTOUR IN FEET (NAVD 88)
  - 310— PROPOSED ELEVATION CONTOUR IN FEET (NAVD 88)
  - MW-104 GROUNDWATER MONITORING WELL TO BE INSTALLED
  - EXISTING GROUNDWATER MONITORING WELL
  - STAGING AREA
  - BIOFILTRATION SWALE
  - P(D) POWER
  - W(D) WATER
  - NG(D) NATURAL GAS
  - SS(D) SANITARY SEWER
  - T-T TELEPHONE

**PLAN**  
LLA GROUNDWATER MONITORING WELL  
INSTALLATION PLAN  
SCALE: 1" = 40'



**KEY MAP**  
NTS

**FLOYD | SNIDER**  
strategy • science • engineering  
**kpff**

PROJECT ENGR./ARCH:  
**MEGAN KING**  
DESIGNER:  
**MMK**  
DRAWN BY:  
**JKH**  
SCALE:  
**AS SHOWN**  
DATE:  
**8/29/2016**  
CHECKED BY:  
**USM**  
CHECKED/APPROVED BY:  
**MMK**



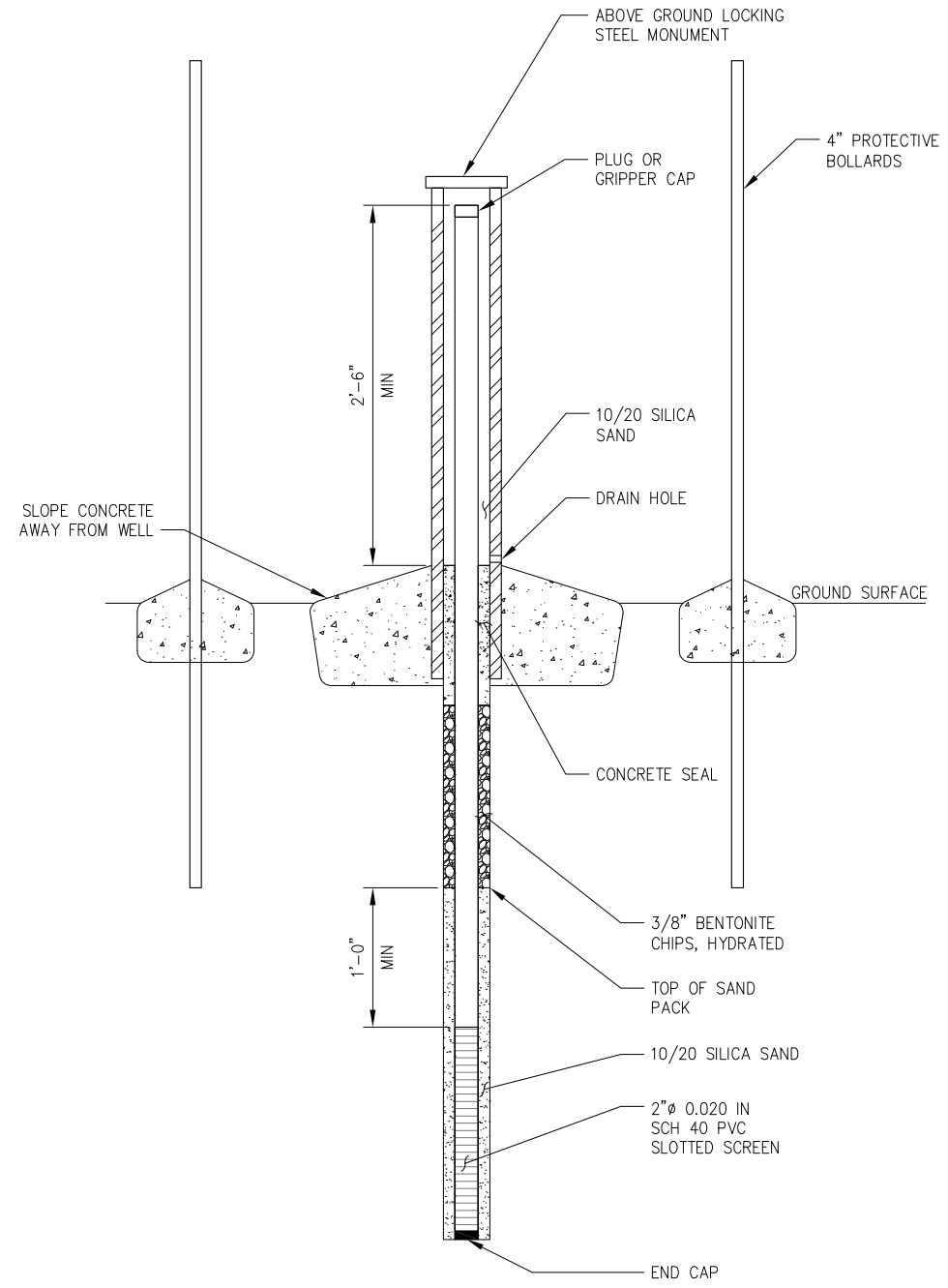
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POS PROJECT MANAGER:  
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POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

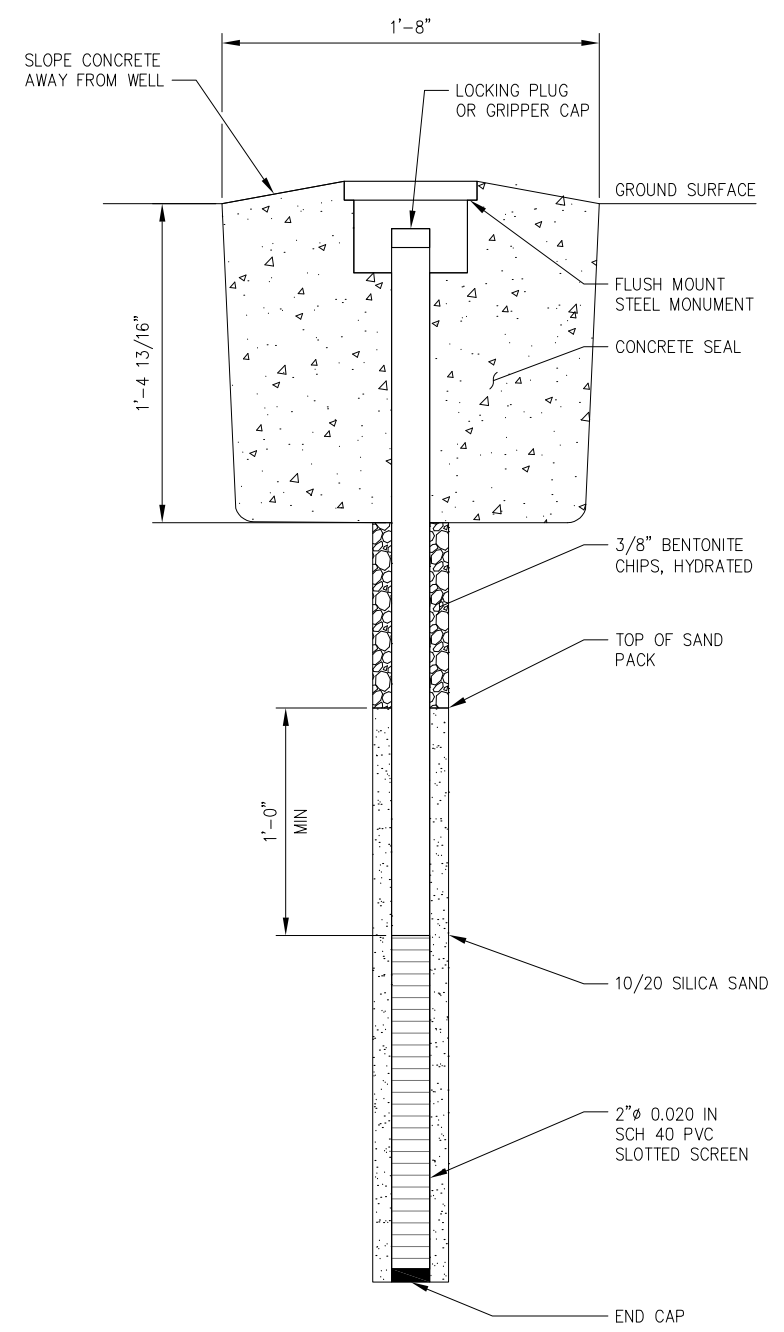
**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME:  
**2017 LORA LAKE APARTMENTS  
MTCA REMEDIATION PROJECTS**  
SHEET TITLE:  
**LLA GROUNDWATER MONITORING WELL  
INSTALLATION PLAN**

POS WORK PROJECT NUMBER:  
**104396, 104396**  
CONSULTANT'S PROJECT NUMBER:  
**POS-LLA/POS-LL**  
POS PROJECT TRACKING NUMBER:  
**STIA-1701 CU02.1**





**DETAIL 1**  
 GROUNDWATER MONITORING WELL INSTALLATION - ABOVE GROUND  
 SCALE: NTS



**DETAIL 2**  
 GROUNDWATER MONITORING WELL INSTALLATION - FLUSH MOUNT  
 SCALE: NTS

NOTE: SET MONUMENT 4" ABOVE SURROUNDING SURFACE AND SLOPE CONCRETE PAD SURFACE ELEVATION TO MATCH SURROUNDING SURFACE. WHERE EXISTING SURFACE IS CONCRETE OR ASPHALT, JOINT SEALING FILLER TO BE USED TO SEAL THE CONTACT JOINT. CONCRETE PAD TO BE REINFORCED WITH #3 AND #4 REBAR GRADE 60.

REVISIONS							
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY

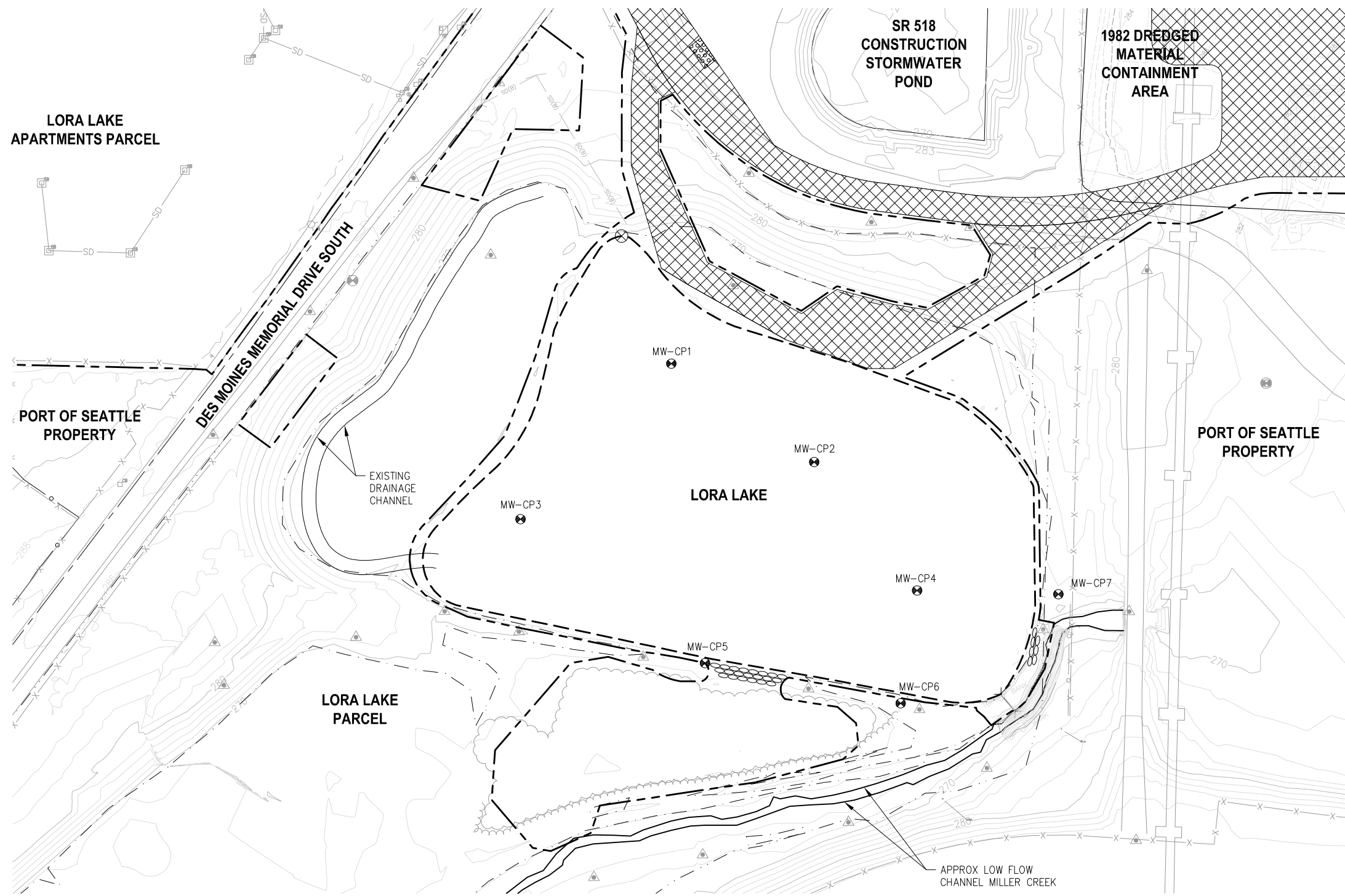


TABLE 1: INSTALLATION MONITORING WELL POINT LOCATIONS

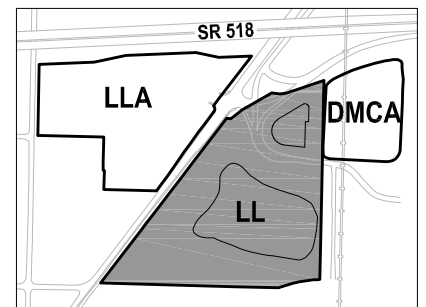
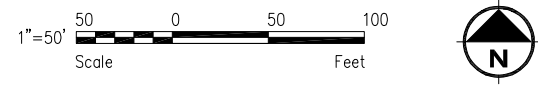
MONITORING POINT	NORTHING	EASTING	WELL MOUNT ELEVATIONS
MW-CP1	174316.28	1272831.30	270.5'
MW-CP2	174232.99	1272952.17	271.5'
MW-CP3	174184.65	1272703.71	270.5'
MW-CP4	174124.23	1273039.25	270.0'
MW-CP5	174062.78	1272859.80	270.5'
MW-CP6	174028.82	1273025.30	270.5'
MW-CP7	174121.07	1273158.76	270.5'

- NOTES:**
- MONITORING WELL POINTS TO BE INSTALLED IN SEASON 2, FOLLOWING CAPPING AND FILLING, BUT PRIOR TO FINAL WETLAND GRADING AND PLANTING. SEE SHEET CU03.2.
  - SEASON 2 FILL ELEVATION FOLLOWING SETTLEMENT, PLACEMENT, AND GRADING IS 266 FEET (NAVD 88) INSIDE THE LORA LAKE CLEANUP AREA.

**LEGEND:**

	PROJECT WORK AREA LIMITS
	CONSTRUCTION ACCESS AND STAGING AREA
	ELEVATION CONTOUR IN FEET (NAVD 88)
	LORA LAKE CLEANUP AREA
	RESTRICTIVE COVENANT BOUNDARY
	WETLAND BOUNDARY
	SEDIMENT CAP MONITORING WELL POINT
	EXISTING FENCE

**PLAN**  
 LL SEASON 2 SEDIMENT CAP MONITORING WELL POINT  
 INSTALLATION PLAN  
 SCALE: 1" = 50'

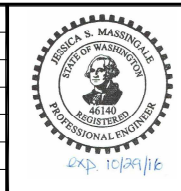


**KEY MAP**  
NTS

**FLOYD | SNIDER**  
 strategy • science • engineering

**kpff**

PROJECT ENGR./ARCH:  
 JESSI MASSINGALE  
 DESIGNER:  
 JSM  
 DRAWN BY:  
 JKH  
 SCALE:  
 AS SHOWN  
 DATE:  
 8/29/2016  
 CHECKED BY:  
 MMK  
 CHECKED/APPROVED BY:  
 JSM



REVISIONS									
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 POS PROJECT ENGINEER:  
 POS DESIGN ENGINEER:  
 POS DRAFTER:  
 POS SCALE:  
 POS DATE:  
 POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT

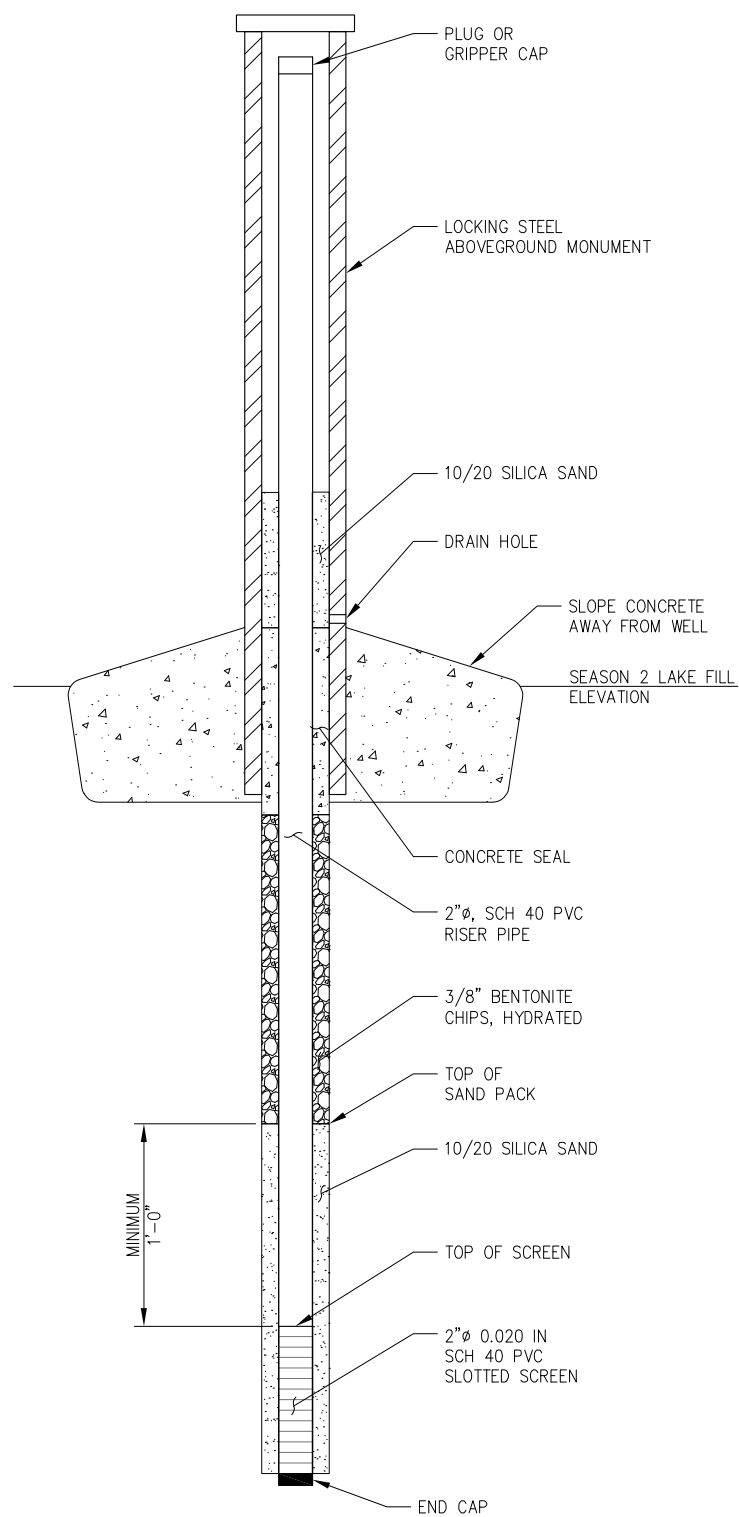
PROJECT NAME:  
**2017 LORA LAKE APARTMENTS  
 MTCA REMEDIATION PROJECTS**

SHEET TITLE:  
**LL SEASON 2 SEDIMENT CAP MONITORING WELL POINT  
 INSTALLATION PLAN**

POS WORK PROJECT NUMBER:  
**104396, 104396**

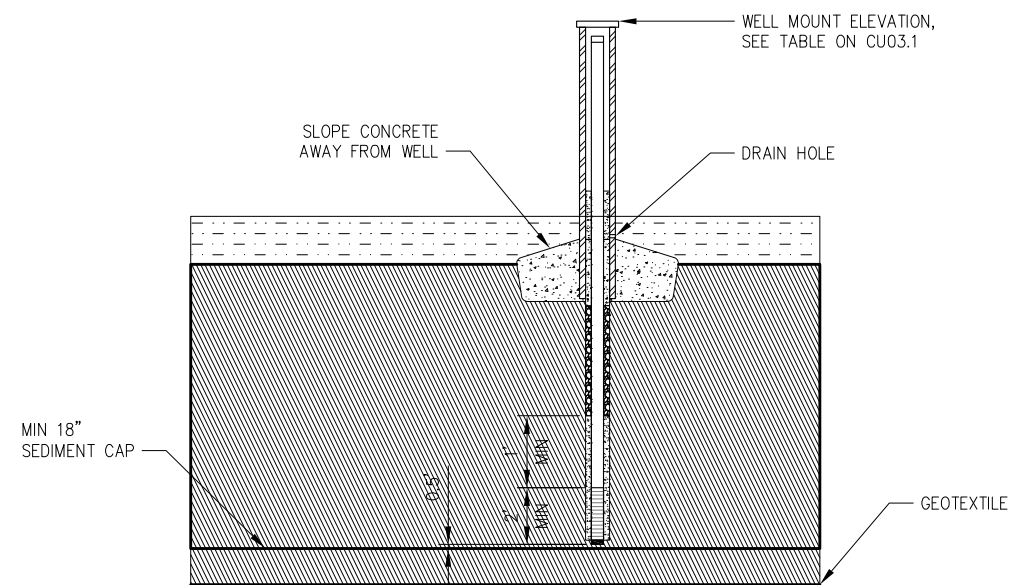
CONSULTANT'S PROJECT NUMBER:  
**POS-LLA/POS-LL**

POS PROJECT TRACKING NUMBER:  
**STIA-1701 CU03.1**



**DETAIL**  
 SEDIMENT CAP MONITORING WELL  
 POINT INSTALLATION  
 SCALE: NTS

1  
 CU03.1



**SECTION**  
 TYPICAL CAP AND FILL SECTION  
 WITH MONITORING WELL POINT INSTALLATION  
 SCALE: NTS

A  
 CU03.1

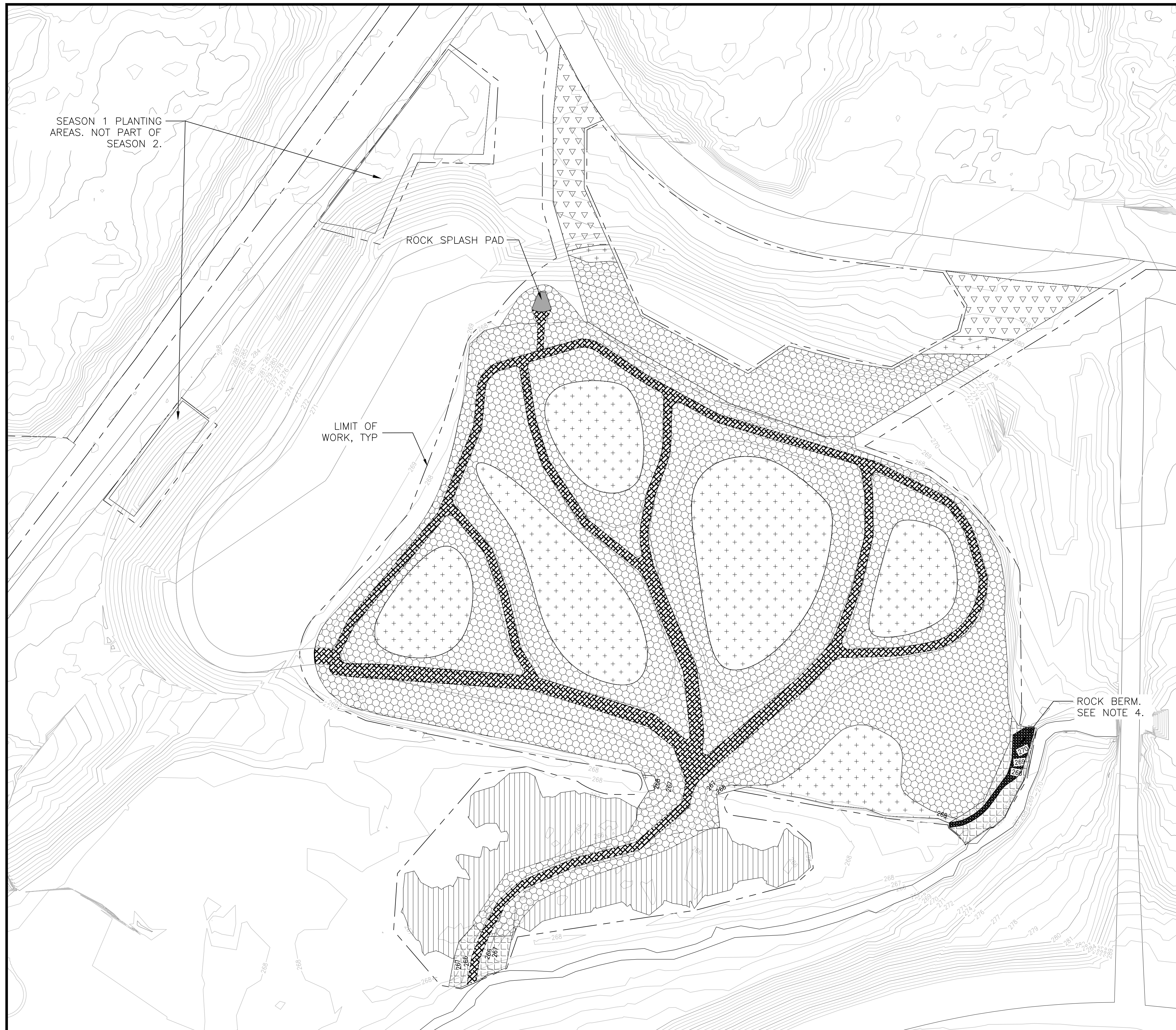
**NOTE:**  
 SEDIMENT CAP MONITORING WELL MOUNT ELEVATIONS ABOVE SEASON 2  
 LAKE FILL ELEVATIONS WILL VARY DEPENDENT ON LOCATION.

**LEGEND:**

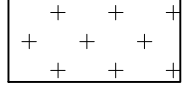
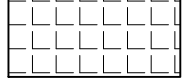

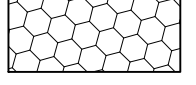


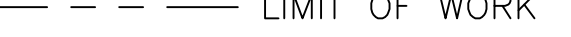
- SEDIMENT CAP AND LAKE FILL SAND (CARBON-AMENDED)
- WETLAND PLANTING TOP SOIL

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NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D



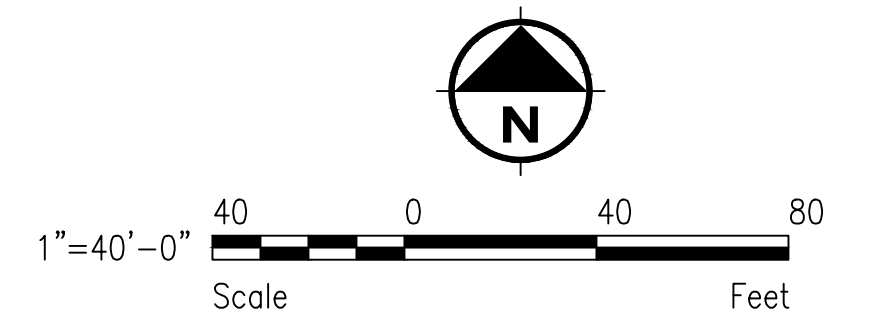


**PLANTING LEGEND:**

-  RIPARIAN AND WETLAND
-  MILLER CREEK RELOCATION
-  ENHANCED EXISTING WETLAND PLANTING ZONE
-  FLOODPLAIN ZONE #1
-  UPLAND BUFFER ZONE
-  SWALE PLANTING ZONE
-  LIMIT OF WORK

**NOTES:**

1. SEE SHEET LZ01.1 FOR PLANT SCHEDULE AND TYPICAL PLANTING DETAILS.
2. SEE SHEETS CG03.1 AND CG07.1 FOR DETAILS ON SEASON 1 PLANTING AREAS.
3. SEE SHEET CG10.1 FOR BIODEGRADABLE EROSION CONTROL FABRIC EXTENTS.
4. SEE SHEETS CG10.2 AND LZ01.1 FOR ROCK BERM PLANTING.



PROJECT ENGR./ARCH:  
CL  
DESIGNER:  
CL  
DRAWN BY:  
CB  
SCALE:  
1" = 40'-0"  
DATE:  
8/19/2016  
CHECKED BY:  
KEN VIGIL  
CHECKED/APPROVED BY:  
CURTIS LOEB



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

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POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:



SEA-TAC INTERNATIONAL AIRPORT  
2017 LORA LAKE APARTMENTS MTCA  
REMEDATION PROJECTS  
SHEET TITLE: **LL SEASON 2 WETLAND PLANTING PLAN**

POS WORK PROJECT NUMBER  
**104396**  
CONSULTANT'S PROJECT NUMBER  
**POS-LLA/POS-LL**  
POS PROJECT TRACKING NUMBER  
**STIA-1701 LP01.1**

# PLANT SCHEDULE

UPLAND BUFFER ZONE (SEASON 1 & 2)								
SCIENTIFIC NAME	COMMON NAME	SIZE	PLANTS PER ACRE (rate)	DISTRIBUTION*	PLANT SPACING	PLANT QUANTITY	REMARKS	
<b>TREES</b>								
ABIES GRANDIS	GRAND FIR	4'-6" BARE ROOT	534	5%	9' OC	9	Plant spacing on rectangular grid. Bare root where specified, otherwise Container or B&B. Rooting shall be to side and bottom of can or burlap.	
ACER MARCOPHYLLUM	BIGLEAF MAPLE	4'-6" HT.	300	15%	12' OC	28		
PICEA SITCHENSIS	SITKA SPRUCE	4'-6" BARE ROOT	534	5%	9' OC	9		
PNUS CONTORTA	SHORE PINE	4'-6" BARE ROOT	534	20%	9' OC	37		
POPULUS BALSAMIFERA SSP. TRICHOCARPA	BLACK COTTONWOOD	4'-6" HT.	300	10%	12' OC	19		
PSEUDOTSUGA MENZIESII	DOUGLAS-FIR	4'-6" BARE ROOT	534	30%	9' OC	56		
THUJA PLICATA	WESTERN REDCEDAR	4'-6" BARE ROOT	534	10%	9' OC	19		
TSUGA HETEROPHYLLA	WESTERN HEMLOCK	4'-6" BARE ROOT	534	5%	9' OC	9		
<b>SHRUBS</b>								
CEANOTHUS VELLUTINUS	SNOWBRUSH	1 GAL.	4800	30%	3' OC	446		Plant spacing on rectangular grid. Container stock shall have rooting to side and bottom of can.
PHILDELPHUS LEWISII	MOCK ORANGE	1 GAL.	1200	30%	6' OC	446		
RIBES SANGUINEUM	REDFLOWER CURRANT	1 GAL.	4800	20%	3' OC	297		
ROSA GYMNOCARPA	BALDHIP ROSE	1 GAL.	4800	20%	3' OC	297		
<b>SEED MIX</b>								
	EROSION CONTROL SEED MIX	NA	SEE SPECS				SEE SPECIFICATIONS FOR DETAILS.	

RIPARIAN AND WETLAND ZONE (SEASON 2)							
SCIENTIFIC NAME	COMMON NAME	SIZE	PLANTS PER ACRE (rate)	DISTRIBUTION*	PLANT SPACING	PLANT QUANTITY	REMARKS
<b>TREES</b>							
FRAXINUS LATIFOLIA	OREGON ASH	4'-6" HT.	300	30%	12' OC	82	Plant spacing on rectangular grid. Bare root where specified, otherwise Container or B&B. Rooting shall be to side and bottom of can or burlap.
PICEA SITCHENSIS	SITKA SPRUCE	4'-6" BARE ROOT		30%	12' OC	82	
POPULUS BALSAMIFERA SSP. TRICHOCARPA	BLACK COTTONWOOD	4'-6" HT.		10%	12' OC	27	
THUJA PLICATA	WESTERN REDCEDAR	4'-6" BARE ROOT		30%	12' OC	82	
<b>SHRUBS</b>							
PHYSCARPUS CAPITATUS	PACIFIC NINEBARK	1 GAL.	1200	15%	6' OC	163	Plant spacing on rectangular grid. Container stock shall have rooting to side and bottom of can.
ROSA NUTKANA	NOOKTA ROSE	1 GAL.	4800	25%	3' OC	1089	
SALIX LUCIDA SSP. LASISANDRA	PACIFIC WILLOW	1 GAL.	534	10%	9' OC	3	
SALIX SCOULERIANA	SCOULER WILLOW	1 GAL.	1200	40%	6' OC	44	
SALIX SITCHENSIS	SITKA WILLOW	1 GAL.	1200	10%	6' OC	3	
SALIX SCOULERIANA	SCOULER WILLOW	1 GAL.	1200	10%	6' OC	3	
<b>SEED MIX</b>							
	WETLAND SEED MIX	NA	SEE SPECS				See specifications for details

FLOODPLAIN ZONE #1 (SEASON 2)							
SCIENTIFIC NAME	COMMON NAME	SIZE	PLANTS PER ACRE (rate)	DISTRIBUTION*	PLANT SPACING	PLANT QUANTITY	REMARKS
<b>SHRUBS</b>							
SALIX HOOKERIANA	HOOKER'S WILLOW	1 GAL.	1200	25%	6' OC	580	Plant spacing on rectangular grid. Container stock shall have rooting to side and bottom of can. Live stakes shall be 36"-48" height, 1/2" to 1" diameter, with a minimum of 10 viable, undamaged buds on each stake. 5 buds shall be below grade.
SALIX LUCIDA SSP. LASISANDRA	PACIFIC WILLOW	LIVE STAKE	534	25%	9' OC	258	
SALIX SCOULERIANA	SCOULER WILLOW	1 GAL.	1200	10%	6' OC	232	
SALIX SITCHENSIS	SITKA WILLOW	LIVE STAKE	1200	30%	6' OC	696	
SPIRAEA DOUGLASII	HARDHACK SPIRAEA	LIVE STAKE	4800	10%	3' OC	639	
<b>SEED MIX</b>							
	WETLAND SEED MIX	NA	SEE SPECS				See specifications for details

ENHANCED EXISTING WETLAND (SEASON 2)							
SCIENTIFIC NAME	COMMON NAME	SIZE	PLANTS PER ACRE (rate)	DISTRIBUTION*	PLANT SPACING	PLANT QUANTITY	REMARKS
<b>SHRUBS</b>							
ROSA PISOCARPA	SWAMP ROSE	1 GAL.	4800	10%	3' OC	167	Plant spacing on rectangular grid. Container stock shall have rooting to side and bottom of can. Live stakes shall be 36"-48" height, 1/2" to 1" diameter, with a minimum of 10 viable, undamaged buds on each stake. 5 buds shall be below grade.
SALIX HOOKERIANA	HOOKER'S WILLOW	LIVE STAKE	1200	10%	6' OC	42	
SALIX LUCIDA SSP. LASISANDRA	PACIFIC WILLOW	LIVE STAKE	534	25%	9' OC	46	
SALIX SITCHENSIS	SITKA WILLOW	LIVE STAKE	1200	10%	6' OC	42	
SPIRAEA DOUGLASII	HARDHACK SPIRAEA	1 GAL.	4800	25%	3' OC	416	
<b>SEED MIX</b>							
	WETLAND SEED MIX	NA	SEE SPECS				See specifications for details

MILLER CREEK RELOCATION ZONE (SEASON 2)							
SCIENTIFIC NAME	COMMON NAME	SIZE	PLANTS PER ACRE (rate)	DISTRIBUTION*	PLANT SPACING	PLANT QUANTITY	REMARKS
<b>TREES</b>							
POPULUS BALSAMIFERA SSP. TRICHOCARPA	BLACK COTTONWOOD	4'-6" HT.	300	100%	12' OC	16	Plant spacing on rectangular grid. Container or B&B. Rooting shall be to side and bottom of can or burlap.
<b>SHRUBS</b>							
PHYSCARPUS CAPITATUS	PACIFIC NINEBARK	1 GAL.	1200	40%	6' OC	20	Container stock shall have rooting to side and bottom of can.
ROSA GYMNOCARPA	BALDHIP ROSE	1 GAL.	4800	60%	3' OC	147	
<b>SEED MIX</b>							
	WETLAND SEED MIX	NA	SEE SPECS				See specifications for details

SWALE PLANTING ZONE (SEASON 2)							
SCIENTIFIC NAME	COMMON NAME	SIZE	PLANTS PER ACRE (rate)	DISTRIBUTION*	PLANT SPACING	PLANT QUANTITY	REMARKS
<b>SHRUBS</b>							
SALIX LUCIDA SSP. LASISANDRA	PACIFIC WILLOW	LIVE STAKE	1200	40%	6' OC	169	Live stakes shall be 36"-48" height, 1/2" to 1" diameter, with a minimum of 10 viable, undamaged buds on each stake. 5 buds shall be below grade.
SALIX SCOULERIANA	SCOULER WILLOW	LIVE STAKE	4800	30%	3' OC	507	
SALIX SITCHENSIS	SITKA WILLOW	LIVE STAKE	4800	30%	3' OC	507	

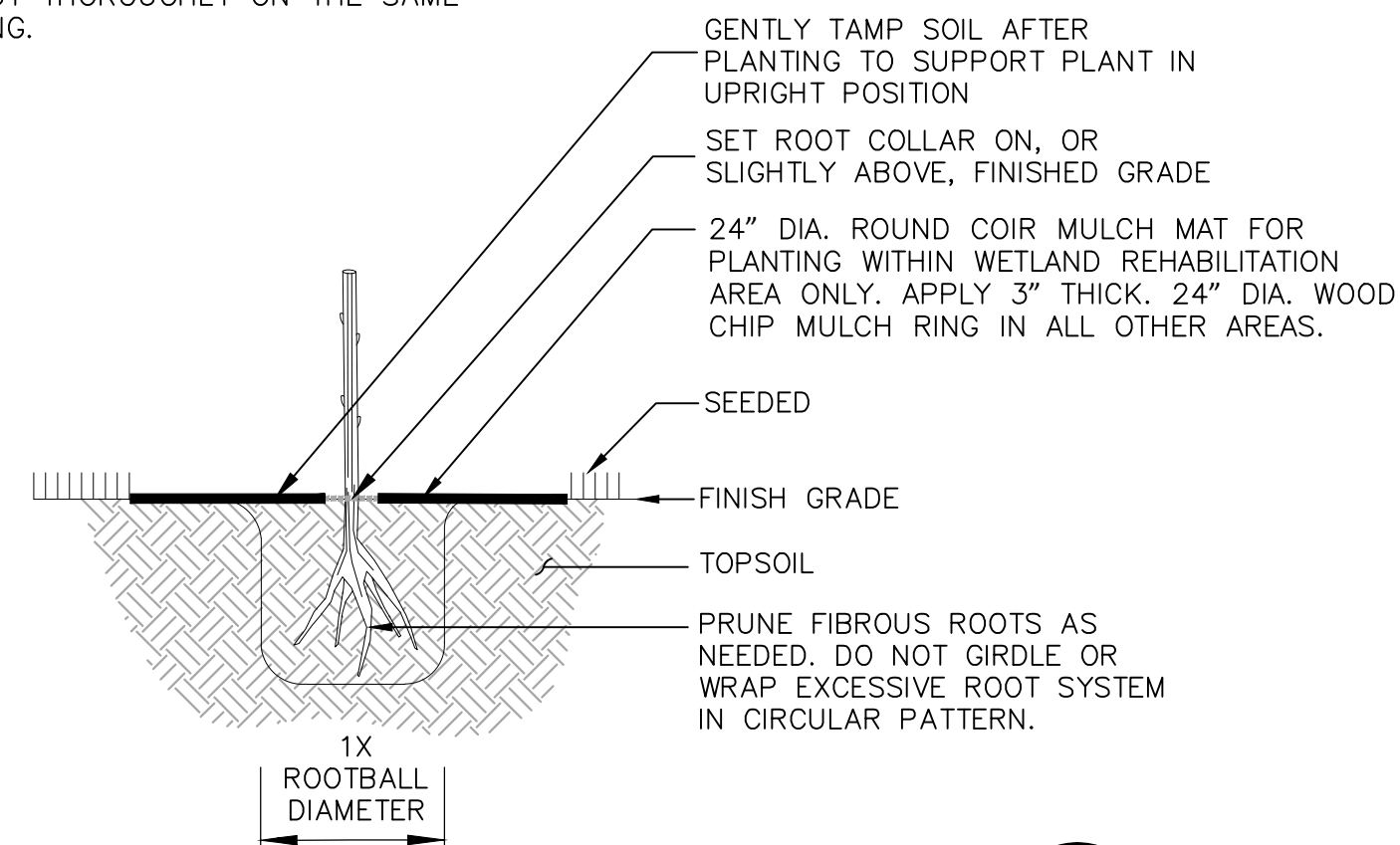
DMCA PLANTED FILTER STRIP (SEASON 2)							
SCIENTIFIC NAME	COMMON NAME	SIZE	PLANTS PER ACRE (rate)	DISTRIBUTION*	PLANT SPACING	PLANT QUANTITY	REMARKS
<b>SHRUBS</b>							
CEANOTHUS VELLUTINUS	SNOWBRUSH	1 GAL.	4800	30%	3' OC	153	Container stock shall have rooting to side and bottom of can.
PHILDELPHUS LEWISII	MOCK ORANGE	1 GAL.	1200	30%	6' OC	38	
RIBES SANGUINEUM	REDFLOWER CURRANT	1 GAL.	4800	20%	3' OC	102	
ROSA GYMNOCARPA	BALHIP ROSE	1 GAL.	4800	20%	3' OC	102	
<b>SEED MIX</b>							
	EROSION CONTROL SEED MIX	NA	SEE SPECS				See specifications for details

## NOTES:

- SEE SPECIFICATIONS FOR DETAILS.
- ROCK BERM SHALL BE PLANTED WITH WILLOW LIVE STAKES AND SEEDED WITH EROSION CONTROL SEED MIX.
- SEE SCHEMATIC PLANTING LAYOUT ON SHEET LZ01.2 FOR PLANT LAYOUT AND CLUSTERING.
- \*DISTRIBUTION IS BY PERCENT OF TOTAL AREA PLANTED.

NOTE:

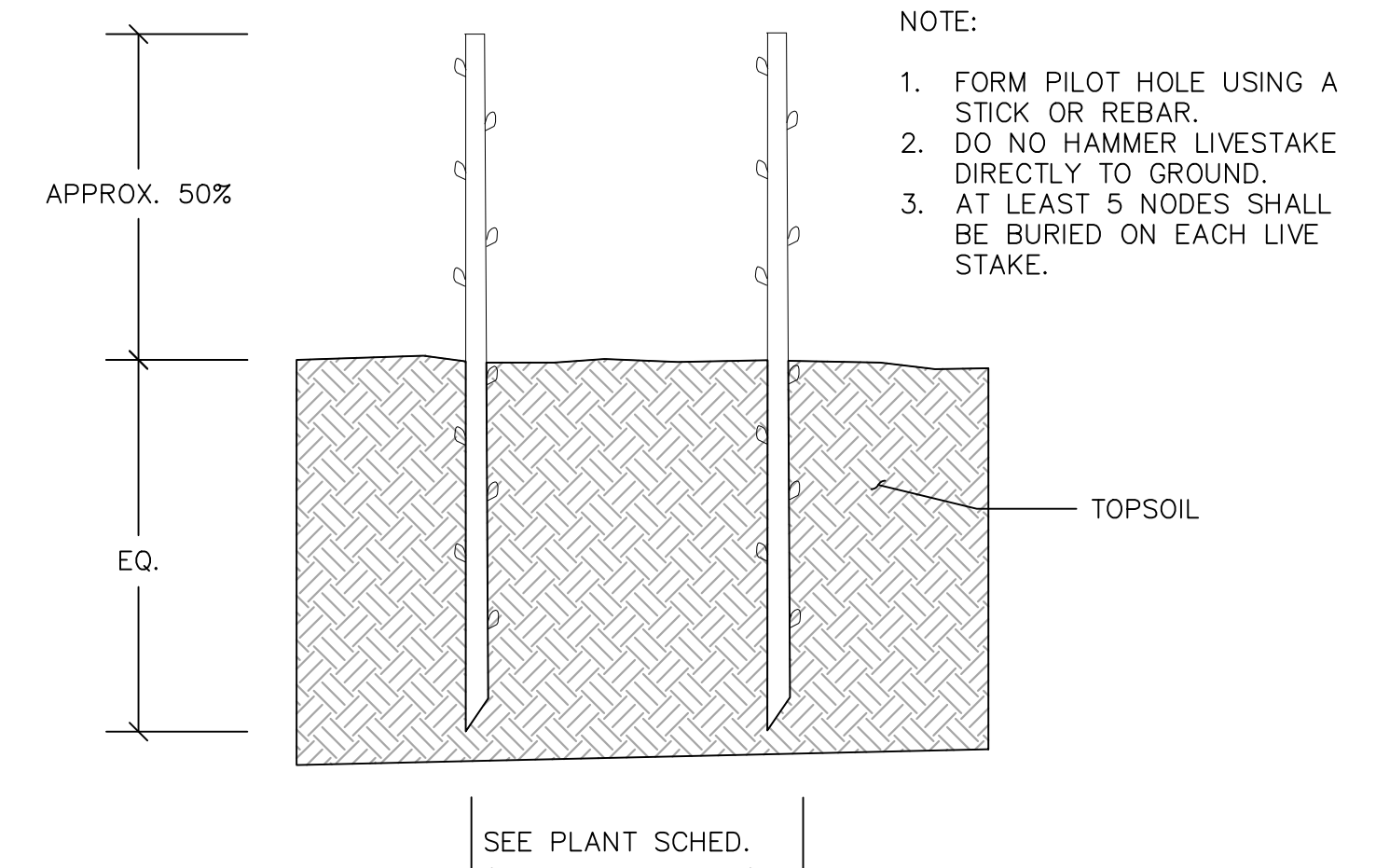
- BAREROOT SHALL BE DORMANT AT THE TIME OF INSTALLATION.
- WATER BAREROOT THOROUGHLY ON THE SAME DAY OF PLANTING.



### DETAIL

TYPICAL BARE ROOT PLANTING  
NTS

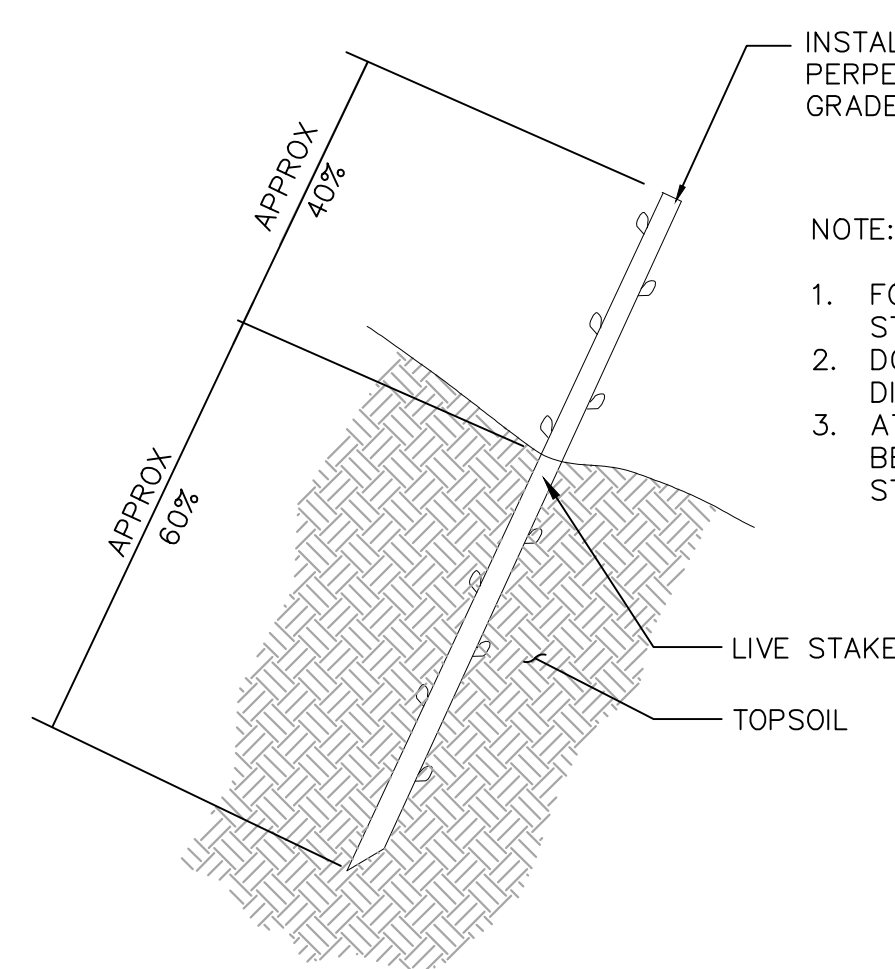
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LZ01.1



### DETAIL

TYPICAL LIVE STAKE PLANTING  
NTS

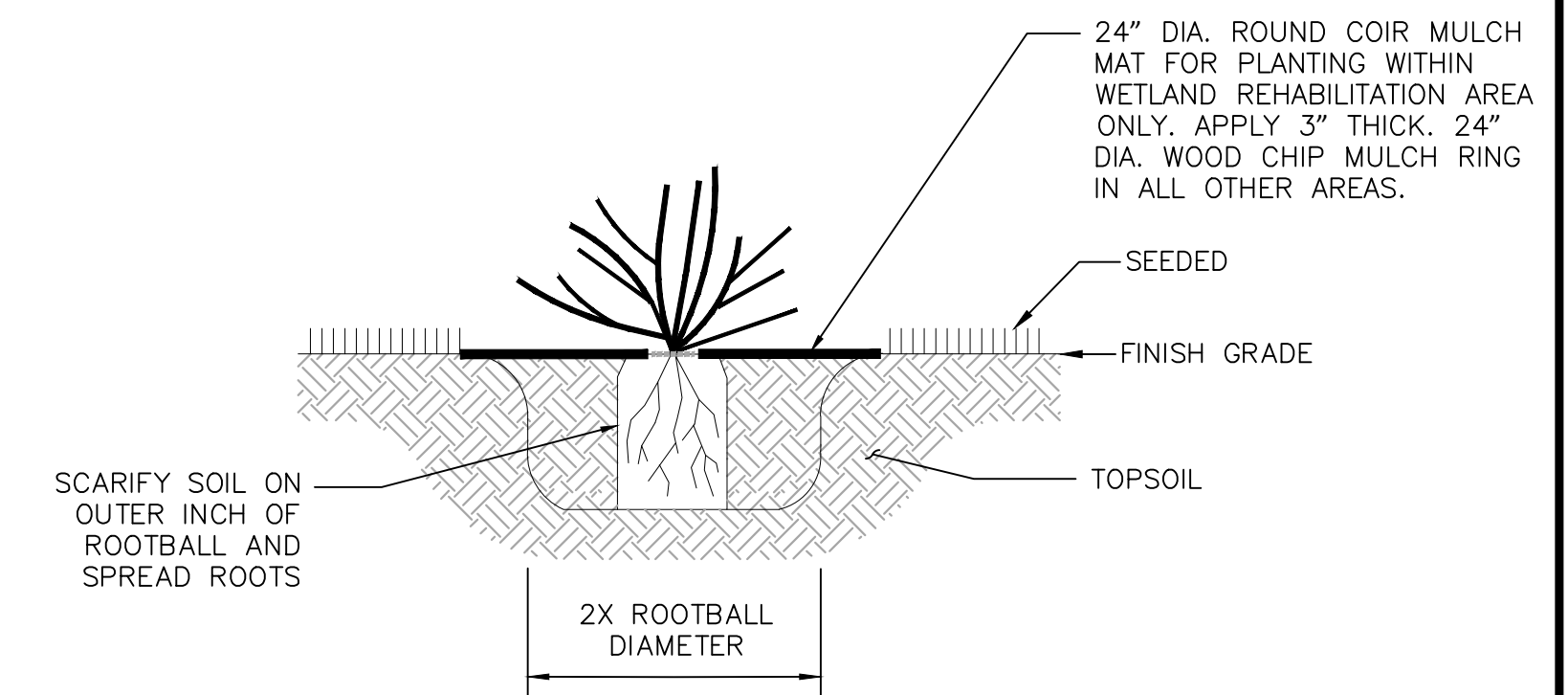
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LZ01.1



### DETAIL

TYPICAL LIVE STAKE PLANTING ON SLOPE  
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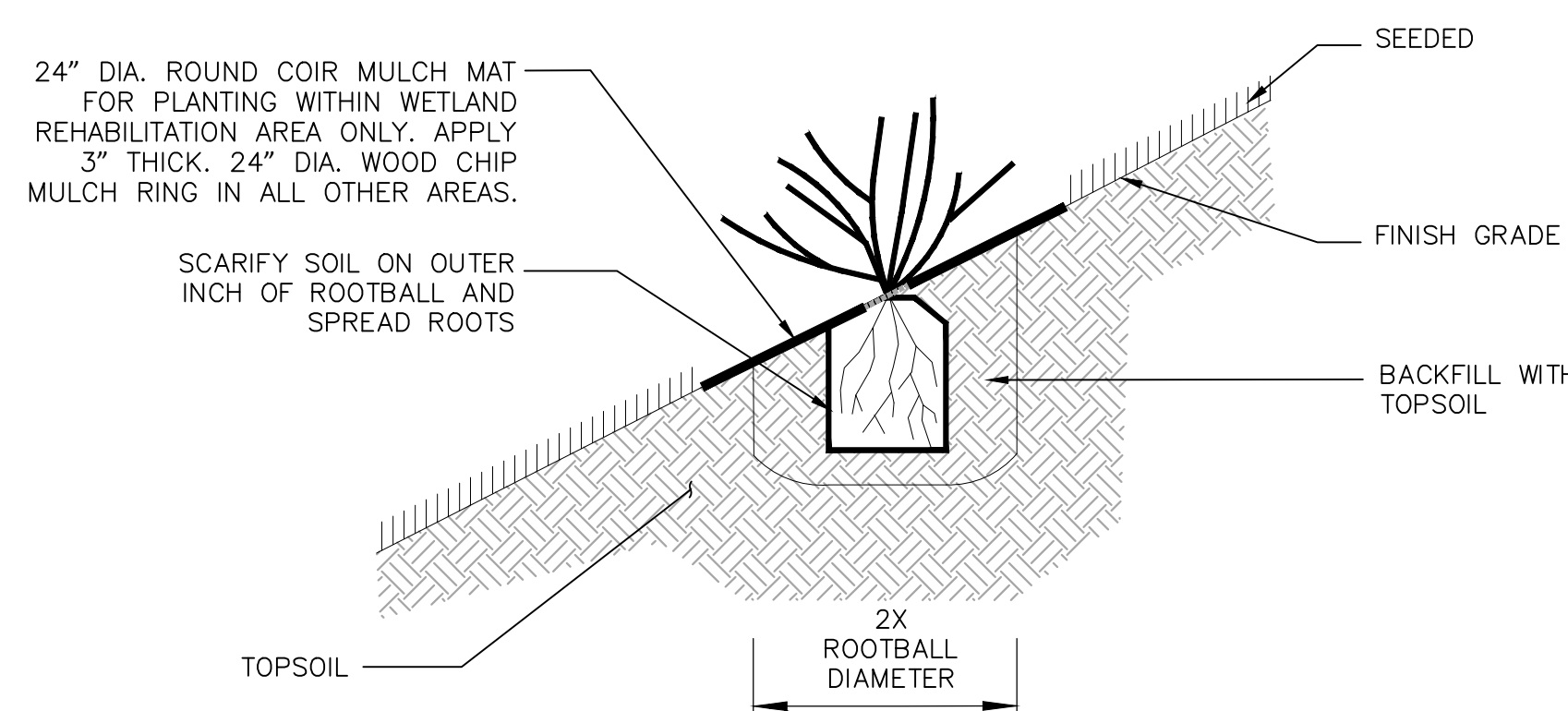
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LZ01.1



### DETAIL

TYPICAL CONTAINER OR BALL AND BURLAP PLANTING  
NTS

4  
LZ01.1



### DETAIL

TYPICAL CONTAINER PLANTING ON SLOPE  
NTS

5  
LZ01.1



PROJECT ENGR./ARCH:  
CL  
DESIGNER:  
CL  
DRAWN BY:  
GB  
SCALE:  
NA  
DATE:  
8/19/2016  
CHECKED BY:  
KEN VIGIL  
CHECKED/APPROVED BY:  
CURTIS LOEB



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:



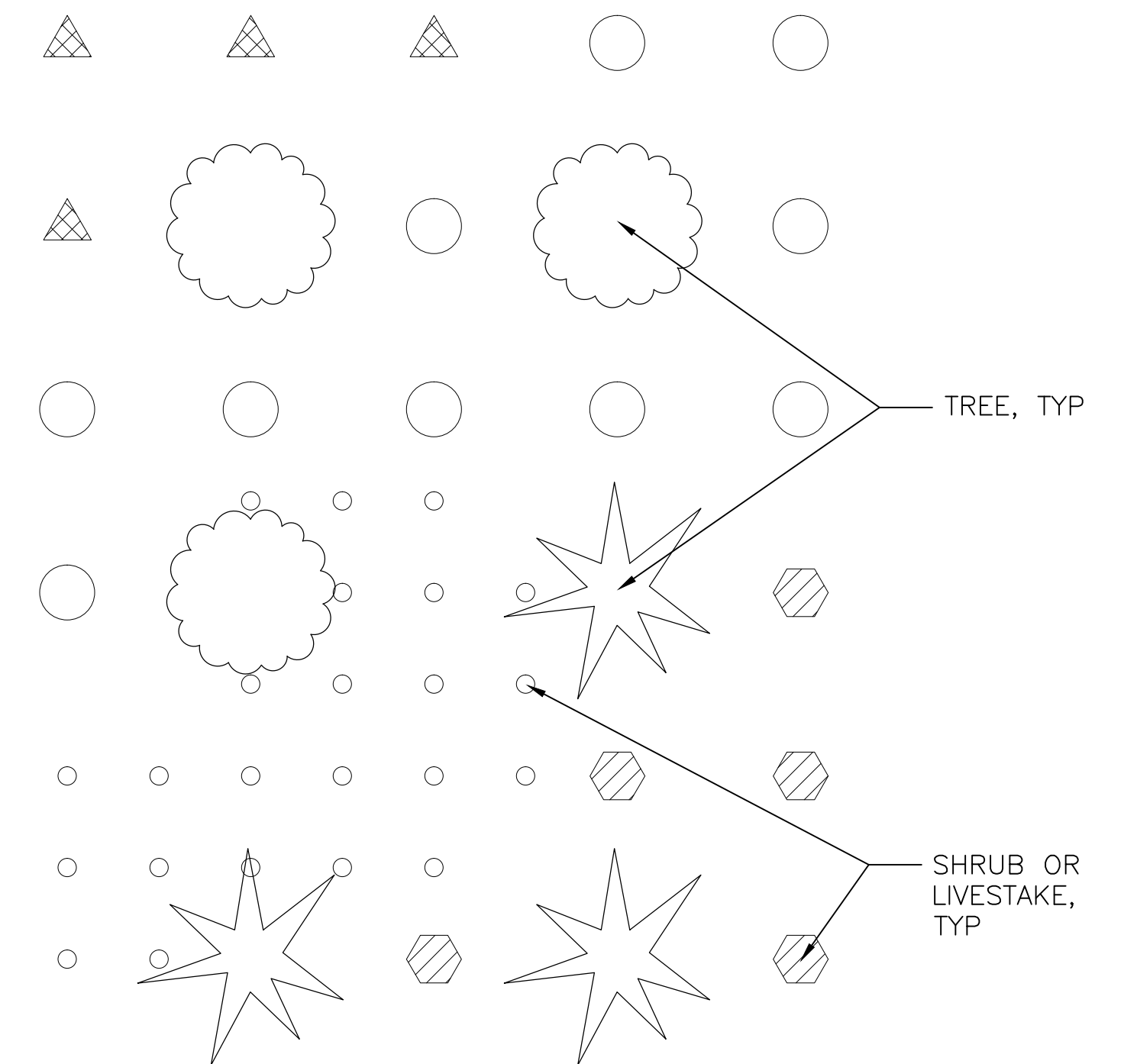
SEA-TAC INTERNATIONAL AIRPORT  
2017 LORA LAKE APARTMENTS MTCA  
REMEDICATION PROJECTS  
SHEET TITLE: LL SEASON 2 WETLAND  
PLANT SCHEDULE AND PLANTING DETAILS

POS WORK PROJECT NUMBER  
104396  
CONSULTANT'S PROJECT NUMBER  
POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER  
STIA-1701 LZ01.1



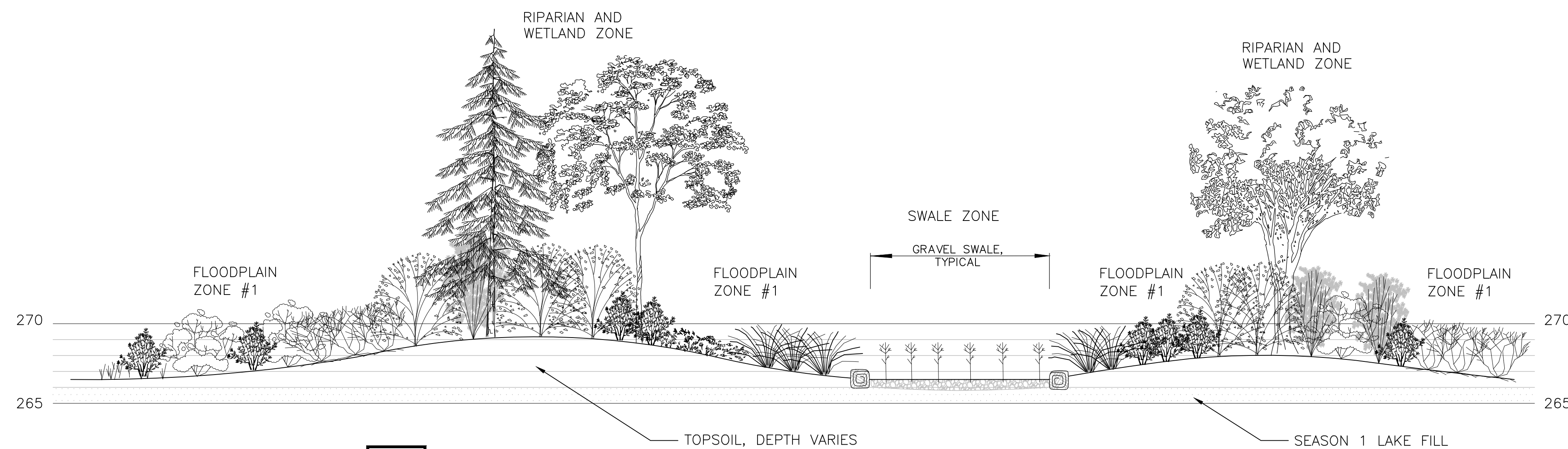
**NOTES:**

1. ADJUST QUANTITY OF TREE SHRUBS AND LIVE STAKES AS NECESSARY TO ACHIEVE THE SPECIFIED RATE PER ACRE.
2. TREES SPACED AT 9' OR 12' O.C. UNIFORMLY THROUGHOUT THE PLANTING AREA. PLANT TREES IN CLUSTERS OF 3 TO 9.
3. SHRUBS OR LIVESTAKES SPACED AT 3', 6', OR 9' O.C. PLANT SHRUBS AND LIVESTAKES IN CLUSTERS OF 10 TO 30.
4. TREES AND SHRUBS ARE PLANTED ON A RECTANGULAR GRID.



**DETAIL**  
SCHEMATIC PLANTING LAYOUT  
NTS

1  
LZ01.1



**SECTION**

PROPOSED SOIL PROFILE AND PLANT COMMUNITIES  
NTS

A  
LP01.1



PROJECT ENGR./ARCH: CL  
DESIGNER: CL  
DRAWN BY: GB  
SCALE: NA  
DATE: 8/19/2016  
CHECKED BY: KEN VIGIL  
CHECKED/APPROVED BY: CURTIS LOEB



REVISIONS									
NO.	DATE	BY	DESCRIPTION	APP'D	NO.	DATE	BY	DESCRIPTION	APP'D

POS PROJECT MANAGER:  
POS PROJECT ENGINEER:  
POS DESIGN ENGINEER:  
POS DRAFTER:  
POS SCALE:  
POS DATE:  
POS CHECKED/APPROVED BY:

**Port of Seattle** SEA-TAC INTERNATIONAL AIRPORT  
PROJECT NAME: 2017 LORA LAKE APARTMENTS MTCA REMEDIATION PROJECTS  
SHEET TITLE: LL SEASON 2 WETLAND DETAILS

POS WORK PROJECT NUMBER: 104396  
CONSULTANT'S PROJECT NUMBER: POS-LLA/POS-LL  
POS PROJECT TRACKING NUMBER: STIA-1701 LZ01.2